DOCUMENT RESUME

ED 212 305 JC 810 248

TITLE	A Development Program for Metropolitan Junior College, Kansas City. Volume Three: The Economy, Population, and Manpower Requirements of the Kansas City Metropolitan Area.
INSTITUTION	Little (Arthur D.), Inc., San Francisco, Calif.
SPONS AGENCY	Metropolitan Junior Coll. District, Kansas City, Mo.
PUB DATE	May 68
NOTE	90p.; For related documents, see JC 810 246-247.
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*College Planning; Community Colleges; Economic Change; *Economic Climate; Economic Progress; Employment Opportunities; *Employment Patterns; Labor Market; Labor Needs; Minority Groups; Population Distribution; Population Growth; *Population Trends; Two Year Colleges; *Urban Areas; Urban Demography; *Vocational Education
IDENTIFIERS	*Missouri (Kansas City)

ABSTRACT

The economy, population, and manpower requirements of the Kansas City metropolitan area are examined in this volume of a report for the planning and development of Metropolitan Junior College (MJC). Part I looks at the Kansas City economy, first from a historical perspective and then in terms of recent trends in economic growth; the comparative growth rates of Kansas City, the state of Missouri, and the nation; structural shifts in employment; recent unemployment trends; and projections of sectoral employment levels in 1975. Additionally, the projection methodology is outlined, and statistical background is provided. Part II reports the results of a manpower requirements approach to vocational education planning. It looks at the existing and future occupational composition of the work force by breaking down all local economic activities into mutually exclusive economic sectors and by studying labor supply and demand for each sector. In addition, an analysis is provided of average annual expansion needs by major industry sectors. A detailed description of data sources and methodology for these analyses is appended to Part II. In Part III, the dynamics of population growth in the Kansas City area are considered, with focus on recent population growth trends and patterns, changes in population distribution and mobility, characteristics of the nonwhite population, educational attainment characteristics, and projections for population growth and distribution in the Kansas City area. (KL)

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A
DEVELOPMENT PROGRAM
FOR
METROPOLITAN JUNIOR COLLEGE
KANSAS CITY

VOLUME THREE
THE ECONOMY, POPULATION, AND MANPOWER REQUIREMENTS OF THE KANSAS CITY METROPOLITAN AREA

REPORT
TO
BOARD OF TRUSTEES
METROPOLITAN JUNIOR COLLEGE DISTRICT—KANSAS CITY
KANSAS CITY, MISSOURI

May 1968

C-69473

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I. THE ECONOMY OF THE KANSAS CITY METROPOLITAN AREA

1. Introduction

In this part of our report we focus our attention on developing an overall analytical view of recent economic trends in the area, have tried to highlight the salient forces that have been shaping the economic structure of the area, and, finally, we have made comprehensive projections of employment in all sectors of the area's economy to 1975.

For the purpose of making these projections, we have devised and implemented an econometric model of the area's economic system. An explanation of this model and a description of the general features of our projection framework are given below. The statistical methods underlying the model and the empirical results that have been obtained are presented in Appendix A.

We might point out that our projective model is the first of its kind ever developed for the Kansas City Metropolitan Area for the purpose of generating a consistent set of economic projections, and its results will be of interest to the community beyond the immediate scope of our project. The model is premised on a set of statistically derived quantitative relationships that describe the fundamental economic forces affecting employment trends in particular sectors of the area's economy.

In our analysis, we have benefited measurably from previous economic studies of the Kansas City Metropolitan Area. In this respect, we should particularly mention the three volume economic base study completed in 1961 by Midwest Research Institute under the spcnsorship of the Kansas City Power and Light Company, and the subsequent two volume study only very recently completed by the City Planning Department of Kansas City, Missouri. Rather than repeating these studies in the great detail that they represent, we have attempted in our work to present a concise appraisal of the area's economic dynamics and to provide a consistent set of benchmark projections that do not now exist.

2. Summary of our Findings

There is every reason to be optimistic about the economy of the Kansas City Metropolitan Area. Historically, greater Kansas City's unique locational advantages have contributed significantly to the area's emergence as an important distribution center and later to the growth of manufacturing activities to fill the economic needs of its large hinterland. The area has established itself as an important manufacturing center, first in producing nondurable goods and more recently in producing durable goods which are exported to the rest of the nation and to all parts of the worls. Today, the area's strength as a manufacturing center overshadows its long-standing importance as a distribution center. Moreover, recent growth in the service industries and in government employment has created a definite structural shift in the area's economy. These structural shifts will continue into the future within the context of a generally growing economy, in which the service industries, including

government, are generally expected to grow at a faster rate than the manufacturing and wholesale and retail trade sectors.

During the next eight years or by 1975, the Kansas City Metropolitan Area economy is expected to gain 71.5 new jobs in nonagricultural industries, about half of which are 36.2 thousand will be concentrated in government, services, and finance-insurance-real estate. Manufacturing employment is expected to grow by 14.9 thousand, while in the transportation-communication-utilities and the wholesale and retail trade group the expected employment growth will be 12.9 thousand. The construction sector itself is expected to generate about 7.3 thousand new jobs during this period.

This anticipated growth in the area's economy pretty much parallels its successful growth pattern during the last eight comparable years. During this period, the area gained 86.1 thousand new jobs in the nonagricultural industries, or a growth of 21.9 percent from the 1959 level. The anticipated growth during the next eight years will be by 14.9 percent over the 1967 level in nonagricultural employment. Thus, the expected growth rate will be below the recently experienced growth rate. In general, this reflects an anticapated overall national trend.

In the final analysis, the Kansas City Metropolitan Area economy is extremely resilient, well balanced in terms of its possible vulnerability to federal defense cutbacks and other sudden exogeneous shifts, its growth is vigorous, and its future is healthy.

3. Historical Perspective

It has often been said that Kansas City is a town that transportation made. Because of its strategic location at the confluence of two important river transportation routes, its link to the Santa Fe and Oregon trails, and its subsequent position on the railroad network leading to the West, Southwest, and the Northwest, the Kansas City area developed as the commercial and distribution center of a large economic hinterland.

As a result of the economic needs of its hinterland and the area's locational advantages, early industrialization in the area centered around to the processing of agricultural products. Flour milling and meat packing began in the 1870's and lumbering in the 1880's. In the 1920's, a major industrial expansion took place with the establishment of primary metal products and apparel industries and automobile assembly operations, as manufacturers sought to supply the regional market with products produced locally. The next important industrial impetus came during World War II, due to defense production.

Manufacturing employment exceeded employment in wholesale and retail trade for the first time during the period 1947 to 1954. During this period, manufacturing employment rose from about 79,000 to over 115,000. Between 1954 and 1958, manufacturing employment declined by over 16,000. Since 1958, however, manufacturing employment has been growing at a steady rate, accounting now (1967) for over 130,000 employees or over 26% of total nonagricultural employment.

The rise of the manufacturing sector as a major force in the area's economy was in no small part due to its already well established advantages in rail, truck, barge, pipeline, and finally, air transportation. Thus, those advantages that have in the past strengthened the area's role as a trade and distribution center have also contributed to the growth of new industries. This is important, since the rise of such regional centers as Omaha, Wichita, and Denver has resulted in a drastic reduction in the trade and service hinterland of the Kansas City Metropolitan Area. As an employer, the wholesale and retail sector has been declining in its share of the area's total nonagricultural employment, from 25.3 percent in 1958 to 23.8 percent in 1967.

With the recent gains made in manufacturing, service, and government employment, Kansas City has been in the process of drastic structural changes in its economy. Today, the Kansas City Metropolitan Area enjoys a balanced economy, relatively less dependent on trade and distribution activities - although these still are quite important - and more dependent on manufacturing, services, and government employment than in the past.

4. Recent Trends in Economic Growth

During the period between 1958 and 1967, the six-county Kansas City Metropolitan Area economy experienced a net gain of 30,000 employees in manufacturing, over 5,000 in transportation-communications- utilities, about 18,000 in wholesale and retail trade, over 5,000 in finance-insurance-real estate, almost 22,000 in services, and 19,000 in government. With negligible short-term swings, employment in the construction sector has remained relatively stable, with only very small growth over the 1958 level (refer to Table 1 for details). Overall, the area has gained slightly over 100,000 new nonagricultural jobs during this period, which marks an important 26 percent increase.

During the 1958 to 1967 period, the fastest growing sectors in the area's economy in terms of employment have been services (45.55%), government (43.62%), and manufacturing (31.19%). These were followed by finance-insurance-real estate (22.09%) and wholesale and retail trade (19.33%). The transportation-communications-utilities (11.03%) and contract construction (5.15%) sectors experienced the slowest growth rates. Meanwhile, employment in the two minor sectors of agriculture-forestry-fisheries mining has continued to decline. During the last two years, employment in the agricultural sector has been somewhat volatile, fluctuating between 6,600 employees in January, 1966 and 8,300 in July, 1966 on the one hand and between 6,400 in January, 1967 and 7,700 in May, 1967, on the other.

Within the manufacturing sector, the durable goods industries have grown in employment by 49.71 percent, compared with a much slower growth rate experienced by the nondurable goods industries (11.27%). The fastest growing industries during this period were the electrical machinery industry (397.06%) and the nonelectrical machinery industry (147.83%), followed by the chemicals and allied products industry (88.24%), combination of tobacco-rubber and miscellaneous plastics products - leather and leather products (70.00%), printing and publishing (37.11%), stone-clay-glass and concrete products (35.14%). and transportation equipment (20.97%). Most of the growth in the electrical machinery industry during this period was due to a major expansion that occured in 1962. Growth in

TABLE 1
KANSAS CITY METROPOLITAN AREA EMPLOYMENT TRENDS AND PROJECTIONS TO 1975[a]
(In thousands of persons)

Standard Industrial Classification (SIC)	Industry Description	– YEARS –										Projected
		1958[b]	1959[b]	1960[b]	1961[b]	1962	1963	1964	1965	1966	1967	1975[e]
A (01 09)	Agriculture, Forestry, and Fisheries			7.8[d]		5.4[d]				7.5[f]	7.0[g]	3.8[d]
B (10 14)	Mining	9	1.0	9	9	7	6	.7	6	6	6	0.8[d]
C (15 17)	Contract Construction	23.3	24.2	21.1	22.4	22.1	23.2	23.4	26.1	26.0	24.5	31.8
D (19 39)	Manufacturing	99.4	103.7	106.1	103.3	108.8	109.4	112.4	115.5	126.4	130.4	145.3
	Durable Goods	51.5	56.6	56.0	53.7	59.3	59.9	63.3	66.2	74.3	77.1	86.9
24 25	Lumber and furniture	3.1	3.3	3.1	2.8	2.5	2.7	2.7	2.6	2.7	2.5	1.7
33 34	Primary and fabricated metal products	13.3	13.2	12.7	12.3	12.9	12.9	13.9	14.1	14.4	14.9	14.5
35	Machinery, except electrical	4.6	5.3	5.8	5.9	6.7	7.0	8.2	9.2	10.9	11.4	14.8
37	Transportation equipment	12.4	13.0	13.1	10.8	12.9	11.9	12.4	14.6	15.0	15.0	14.3
	Other Durable Goods	18.1	20.8	21.3	21.9	24.3	25.4	29.1	25.7	31.2	33.3	41.6
19 38 39	Ordnance and accessories Instruments Miscellaneous manufacturing industries	11.0	12.1	11.6	11.7	4.7	5.2	7.7	4.9	9.2	11.4	
32	Stone, clay, glass and concrete products	3.7	4.1	4.2	4.3	4.5	4.5	4.7	4.9	5.1	5.0	
36	Machinery, electrical	3.4	4.6	5.5	5.9	15.1	15.7	16.7	15.9	16.9	16.9	
	Nondurable Goods	47.9	48.1	49.1	49.6	49.5	49.5	49.1	49.3	52.1	53.3	58.4
20	Food and kindred products	16.9	16.9	17.3	17.5	16.5	16.2	15.9	14.8	13.9	13.5	12.0
22 23	Textiles, apparel, and related products	7.4	7.4	7.3	7.2	7.2	7.2	7.1	7.0	6.9	7.0	6.6
27	Printing and publishing	9.7	9.8	10.3	10.5	10.6	10.5	10.8	11.9	12.7	13.3	14.2
28	Chemicals and allied products	5.1	4.9	5.0	5.4	6.1	6.5	6.3	6.3	8.8	9.6	15.2
	Other Nondurable Goods	8.8	9.1	9.2	9.0	9.1	9.1	9.0	9.3	9.8	9.9	10.4
21 30 31	Tobacco Rubber and misc. plastic products Leather and leather products	2.0	2.1	2.2	2.2	2.2	2.3	2.5	2.9	3.2	3.4	
26	Paper and allied products	4.1	4.6	4.6	4.6	4.7	4.7	4.4	4.4	4.7	4.7	
29	Petroleum refining and related industries	2.7	2.4	2.4	2.2	2.2	2.1	2.1	2.0	1.9	1.8	
E (40 49)	Transportation, communication, electric, gas, and sanitary services	43.5	44.8	43.0	41.3	45.4	44.8	44.6	45.5	46.2	48.3	50.0
F (50 59)	Wholesale and retail trade	95.7	99.1	1[illegible]9.0	101.3	103.4	104.6	105.6	109.2	112.4	114.2	125.4
G (60 67)	Finance, Insurance, and Real Estate	24.9	25.9	26.8	26.8	27.2	27.9	28.3	29.1	29.8	30.4	33.9
H (70 89)	Services	47.2	49.1	50.7	51.3	56.3	59.2	61.3	63.3	66.3	68.7	83.7
I (91 94)	Government	43.1	44.6	47.0	47.7	48.5	50.8	53.7	57.0	59.7	61.9	79.6

NOTES

[a] Both the historical data and the projections are expressed in U. S. Bureau of Labor Statistics (BLS) wage and salary employment terms. These employment estimates are derived from payroll reports and thus exclude the self-employed and unpaid family workers. In addition, they represent the number of jobs in the nonfarm sectors of the economy rather than the number of people and thus count multiple jobholders in each job they held. Salaried officers of corporations are included. Government employment covers only civilian employees; military personnel are excluded.

[b] Employment data for these years have been adjusted to include Cass and Platte Counties, Missouri, which were definitionally made a part of the Kansas City Standard Metropolitan Statistical Area in 1962.

[c] Average of the first seven months.

[d] From National Planning Association, Center for Economic Projections, *Economic and Demographic Projections for Two Hundred and Twenty Four Metropolitan Areas, Industry Employment in 224 Metropolitan Areas*, Volume 1, Regional Economic Projections Series, Report No. 67-R-1 (Washington, D.C.: National Planning Association, May, 1967.

[e] Arthur D. Little, Inc. projections.

[f] Average of January, March, May, July, and September, for which data were available from Missouri Division of Employment Statistics, *Kansas City Labor Trends* (May, July, September, November, 1966).

[g] Average of January, March, and May, for which data were available from Missouri Division of Employment Statistics, *Kansas City Labor Trends* (May, July, 1967).

Sources

(1) 1958-1966: U. S. Bureau of Labor Statistics, *Employment and Earnings Statistics for States and Areas 1939-66*, Bulletin No. 1370-4 (Washington, D.C.: U. S. Government Printing Office, July 1967), pp. 406-409.

(2) 1967: January: Missouri Division of Employment Security, *Kansas City Labor Trends* (May, 1967).
February: U. S. Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force*, Vol. 14, No. 11 (May, 1967), pp. 58-59.
April: *Ibid.*, Vol. 14, No. 1 (July, 1967), pp. 58-59.
March, May: Missouri Division of Employment Security, *Kansas City Labor Trends* (July, 1967).
June, July: U. S. Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force*, Vol. 14, No. 3 (September, 1967), pp. 82-83.

the nonelectrical machinery industry was rapid and continuous, mostly due to a spectacular growth in the manufacture of vending machines throughout the nation and in Kansas City, headquarters for the largest producer of vending machines in the country.

Meanwhile, much slower growth rates were experienced by the paper and allied products industry (14.63%), primary and fabricated metals products industries combined (12.03%), and combination of ordnance and accessories-instruments-miscellaneous manufacturing industries (3.64%). Declining industries were petroleum refining and related industries (-33.33%), food and kindred products (-20.12%), lumber and furniture (-19.35%), and textiles-apparel-related products industry (5.41%).

5. Comparative Analysis of Growth Rates

Recent economic growth trends in the Kansas City Metropolitan Area can be placed in perspective by looking at growth rates experienced within Missouri and at the national level. As shown in Table 2, during the period 1958 to 1966, total nonagricultural employment in the Kansas City Metropolitan Area has grown at a faster rate than Missouri and almost as fast as the nation as a whole. Manufacturing growth rate in the area has been substantially higher than the Missouri and the national rates, due particularly to higher growth rates experienced in the durable goods industries. While Missouri lost employment in the transportation-communication-utilities sector by 2.1 percent, Kansas City experienced a growth of 6.2 percent. Growth rates experienced in wholesale and retail, services, and government sectors were individually higher than those in Missouri but slightly under the national rates. Employment growth in construction and finance-insurance-real estate were below both the Missouri and the national rates. Mining has been a declining sector in the area, and this appears to be a general trend both in Missouri and in the nation as a whole.

Among the manufacturing industries, local growth rates in the nonelectrical machinery and electrical machinery industries have been considerably higher than the Missouri or the national rates. These have been only partially matched by growth rates experienced in the area's chemicals industry. These three industries together have accounted for 23.5 thousand of the 27.0 thousand new jobs in manufacturing between 1958 to 1966.

Among the declining industries in the area, the most important in terms of the volume of employment is the food and kindred products industry. This industry has been declining in employment in Missouri, as well as nationally, but the rate of decline in the Kansas City Metropolitan Area appears to be considerably more.

6. Structural Shifts in Employment

Table 3 shows the broad outlines of most recent shifts in the sectoral composition of nonagricultural employment and presents the projected composition of employment in 1975. These projections will be discussed in greater detail later on. We should like to describe here the nature of these broad structural shifts in the area's economy.

TABLE 2
EMPLOYMENT TRENDS IN THE KANSAS CITY METROPOLITAN AREA, 1958 - 1966
(Compared with Missouri and the United States)
(Employment in thousands of persons)

Standard Industrial Classification (SIC)	Industry Description	Kansas City SMSA			Missouri			United States		
		1958[a]	1966	% Growth	1958	1966	% Growth	1958	1966	% Growth
	Total Nonagricultural Employment*	378.0	467.4	23.7	1,297.9	1,544.3	19.0	51,363	63,864	24.3
B (10-14)	Mining	.9	.6	-33.3	8.4	8.2	-2.4	751	628	16.4
C (15-17)	Contract Construction	23.3	26.0	11.6	62.4	76.5	22.6	2,778	3,281	18.1
D (19-39)	Manufacturing	99.4	126.4	27.2	374.5	442.7	18.2	15,945	19,081	19.7
	Durable Goods	51.5	74.3	44.3	181.4	241.4	33.1	8,830	11,186	26.7
24,25	Lumber and furniture	3.1	2.1	-12.9	14.4	15.2	5.6	975.8	1,078.0	10.5
33,34	Primary and fabricated metal products	13.3	14.4	8.3	36.5	42.4	16.2	2,230.4	2,677.9	20.1
35	Machinery, except electrical	4.6	10.9	137.0	21.7	32.9	51.6	1,362.4	1,867.7	37.1
37	Transportation equipment	12.4	15.0	21.0	53.2	78.4	47.4	1,594.6	1,905.8	19.5
	Other Durable Goods	18.1	31.2	72.4	55.6	72.5	30.4	2,666.3	3,656.7	37.1
19	Ordnance and accessories							158.1	255.8	61.8
38	Instruments	11.0	9.2	-16.4	21.5	20.3[b]	-5.6	323.8	426.5	31.7
39	Miscellaneous manufacturing industries							373.0	440.2	18.0
32	Stone, clay, glass and concrete products	3.7	5.1	37.8	13.7	14.5	5.8	562.4	641.3	14.0
36	Machinery, electrical	3.4	16.9	397.1	20.4	37.7	84.8	1,249.0	1,892.9	51.6
	Nondurable Goods	47.9	52.1	8.8	193.1	201.3	4.2	7,116	7,896	11.0
20	Food and kindred products	16.9	13.9	-17.8	54.8	52.4	-4.4	1,772.8	1,760.8	-0.7
22,23	Textiles, apparel, and related products	7.4	6.9	-6.8	35.8	36.7	2.5	2,090.6	2,346.3	12.2
27	Printing and publishing	9.7	12.7	30.9	25.2	32.0	27.0	872.6	1,026.2	17.6
28	Chemicals and allied products	5.1	8.1	72.5	21.2	26.5	25.0	794.1	954.4	20.2
	Other Nondurable Goods	8.8	9.8	11.4	50.3[c]	44.9[c]	-10.7	1,585.9	1,807.8	14.0
21	Tobacco				n.a.	n.a.	n.a.	94.5	83.7	-11.4
30	Rubber and misc. plastic products	2.0	3.2	60.0	n.a.	n.a.	n.a.	344.3	513.4	49.1
31	Leather and leather products				37.9	31.9	-15.8	359.2	357.2	-0.6
26	Paper and allied products	4.1	4.7	14.6	12.4	13.0	4.8	564.1	670.7	18.9
29	Petroleum refining and related industries	2.7	1.9	-29.6	n.a.	n.a.	n.a.	223.8	182.8	-18.3
E (40-49)	Transportation, Communication, Electric, Gas, and Sanitary Services	43.5	46.2	6.2	122.1	119.5	-2.1	3,976	4,137	4.0
F (50-59)	Wholesale and Retail Trade	95.7	112.4	17.5	304.3	342.5	12.6	10,750	13,220	23.0
G (60-67)	Finance, Insurance, and Real Estate	24.9	29.8	19.7	67.2	83.0	23.5	2,519	3,086	22.5
H (70-89)	Services	47.2	66.3	40.5	173.1	229.4	32.5	6,806	9,582	40.8
I (91-94)	Government	43.1	59.7	38.5	185.9	242.5	30.4	7,839	10,850	38.4

NOTES

*Components may not add up to the totals given due to rounding.

[a]Employment data for these years have been adjusted to include Cass and Platte Counties, Missouri, which were definitionally made a part of the Kansas City Standard Metropolitan Statistical Area in 1962.

[b]Definitionally not comparable to the 1958 figure.

[c]Leather and leather products *plus* paper and allied products.

n.a. Not Available

Sources (1) Kansas City SMSA and Missouri: U. S. Bureau of Labor Statistics, *Employment and Earnings Statistics for States and Areas 1939-1966*, Bulletin No. 1370-4 (Washington, D.C.: U. S. Government Printing Office, July 1967), pp. 400-409.

(2) United States: U. S. Bureau of Labor Statistics, *Handbook of Labor Statistics 1967*, Bulletin No. 1555 (Washington, D. C.: U. S. Government Printing Office, 1967), pp. 56-58.

TABLE 3
COMPOSITION OF NONAGRICULTURAL EMPLOYMENT IN THE KANSAS CITY METROPOLITAN AREA: PAST TRENDS AND PROJECTIONS TO 1975[a]

Standard Industrial Classification (SIC)	*Industry Description*	*(Percent)*										
		1958	*1959*	*1960*	*1961*	*1962*	*1963*	*1964*	*1965*	*1966*	*1967*	*Projected 1975*
	Total Nonagricultural Employment[b]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
B (10-14)	Mining	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
C (15-17)	Contract Construction	6.2	6.2	5.3	5.7	5.4	5.5	5.4	5.8	5.6	5.1	5.8
D (19-39)	Manufacturing	26.3	26.4	26.6	26.2	26.4	26.0	26.1	25.9	27.0	27.2	26.4
(19,24-25,32-39)	Durable Goods	13.6	14.2	14.2	13.6	14.4	14.3	14.7	14.8	15.9	16.1	15.8
(20-23,26,27-31)	Nondurable Goods	12.7	12.2	12.4	12.6	12.0	11.7	11.4	11.1	11.1	11.1	10.6
E (40-49)	Transportation, communication, electric gas, and sanitary services	11.5	11.4	10.9	10.5	11.0	10.6	10.4	10.2	9.9	10.1	9.0
F (50-59)	Wholesale and retail trade	25.3	25.3	25.3	25.6	25.1	24.9	24.6	24.5	24.0	23.8	22.8
G (60-67)	Finance, Insurance, and Real Estate	6.6	6.6	6.8	6.8	6.6	6.6	6.6	6.5	6.4	6.3	6.2
H (70-89)	Services	12.5	12.5	12.8	13.0	13.7	14.1	14.3	14.2	14.2	14.3	15.2
I (91-94)	Government	11.4	11.4	11.9	12.1	11.8	12.0	12.5	12.8	12.8	12.9	14.5

NOTES: [a]See Table 1 for the underlying employment data. It should be stressed again, for purposes of clarity, that the underlying employment data (i.e., both the historical data and the projections to 1975) are expressed in U. S. Bureau of Labor Statistics (BLS) wage and salary employment terms. In terms of coverage and definition, the BLS employment data differ from the *Census of Population* and the U. S. Department of Commerce *County Business Patterns* employment data.

[b]Components may not add up to the total due to rounding.

The wholesale and retail sector in the area's total nonagricultural employment has declined from 25.3 percent in 1958 to 23.8 percent in 1967, which represents a slow but definite relative shift. Despite the recent absolute and relative growth trends experienced in the manufacturing industries, manufacturing as a whole has consistently accounted for about 26 and more recently 27 percent of the area's total nonagricultural employment. Paralleling the trend observed in the wholesale and retail trade sector, the share of the transportation-communication-utilities sector has also been declining, from 11.5 percent in 1958 to 9.9 percent in 1967. A similar downward trend is experienced in the finance-insurance-real estate sector, which has experienced a steady decline in its share from 6.6 percent in 1958 to 6.3 percent in 1967. The share of the construction sector has been shifting as well, but this is more difficult to pinpoint because of short-term swings in this sector's employment. The growth sectors have noticeably been services and government, which together have shifted their combined share of the area's total nonagricultural employment from 23.9 percent in 1958 to 27.2 percent in 1967.

It is important to point out that within the manufacturing sector, the share of the durable goods industries in the area's total nonagricultural employment has been increasing steadily from 13.6 percent in 1958 to 15.8 percent in 1967. A contrary trend is observed in the nondurable goods industries as a whole, whose share has declined from 12.7 percent in 1958 to 10.6 percent in 1967.

A glance at the projected composition of the area's nonagricultural employment, given in the last column of Table 3, indicates that the recently observed trends will continue into the future. We should like to make two remarks for purposes of clarity. First, it will be seen that the projected share of the construction sector in the area's total nonagricultural employment in 1975 is 5.8 percent, even though its share has declined during the last three years from 5.8 percent to 5.1 percent. This projection anticipates an upward trend in the construction industry, due particularly to the presently planned public works projects in the area, continued construction in downtown Kansas City, Missouri, and new construction associated with the Mid-Continent International Airport. Secondly, it will be observed that the employment share of the transportation-communication-utilities sector is projected to continue its slow but steady decline from 10.1 percent in 1967 to 9.0 percent in 1975, although employment in air transportation and communication is expected to increase, perhaps significantly.

7. Recent Trends in Unemployment

As shown in Table 4, total unemployment in the Kansas City Metropolitan Area has been steadily decreasing since the high point in 1961 when the unemployment rate was 6.9 percent. By 1966, the average number of the unemployed declined to 22.3 thousand, as the unemployment rate descended to 4.0 percent. According to most recent reports, the unemployment level stood at approximately 24 thousand during the first few months in 1967, while the unemployment rate averaged about 4.3 percent. More recently, in May, 1967, a drop to about 21,000 was again recorded in the unemployment level, while the unemployment rate fell to 3.7 percent. This was slightly under the seasonally

TABLE 4
UNEMPLOYMENT TRENDS IN THE KANSAS CITY METROPOLITAN AREA
(Compared with Selected Metropolitan Areas)

	KANSAS CITY		ST. LOUIS		DALLAS		DENVER		ATLANTA		MINNEAPOLIS – ST. PAUL	
Years	Total Unemployment (Thousands)	Unemployment Rate[a]	Total Unemployment (Thousands)	Unemployment Rate[a]	Total Unemployment (Thousands)	Unemployment Rate[a]	Total Unemployment (Thousands)	Unemployment Rate[a]	Total Unemployment (Thousands)	Unemployment Rate[a]	Total Unemployment (Thousands)	Unemployment Rate[a]
1960	29.8	6.4	49.0	5.5	19.1	4.1	12.8	3.2	18.7	4.2	21.2	3.2
1961	32.0	6.9	56.2	6.4	23.5	4.9	14.7	3.6	22.3	4.9	28.0	4.2
1962	26.9	5.4	48.1	5.4	18.9	3.8	15.9	3.6	16.6	3.5	23.7	3.5
1963	25.6	5.1	43.0	4.7	20.8	4.0	18.4	4.2	15.7	3.2	24.7	3.6
1964	24.5	4.8	37.4	4.0	20.6	3.8	16.2	3.7	15.5	3.0	24.7	3.5
1965	24.1	4.5	33.0	3.5	19.4	3.4	15.7	3.6	14.5	2.6	21.4	2.9
1966[b]	22.3	4.0	32.7	3.3	15.4	2.6	15.6	3.4	16.5	2.9	17.3	2.3

NOTES: [a]Total unemployment as percent of total work force.

[b]Preliminary (11-month) average.

Source: *Manpower Report of the President 1967* (Washington, D.C.: U. S. Government Printing Office, 1967), pp. 263 264.

adjusted national rate of 3.8 percent for that month, but above the seasonally unadjusted national rate of 3.2 percent.*

Unemployment rates in five selected, comparable metropolitan areas have consistently been below the Kansas City rates during the 1960 to 1966 period. Dallas, Denver, Atlanta, and Minneapolis-St. Paul metropolitan areas have enjoyed not only lower unemployment *rates* than Kansas City but also lower *levels* of unemployment. It should be noted, however, that the volume of unemployment in the Kansas City Metropolitan Area has declined by over seven thousand between 1960 and 1966, which is matched only by St. Louis among the five metropolitan areas selected for this comparative analysis. These comparisons should, in general, be appropriately qualified in view of the fact that these metropolitan areas display striking economic differences in many respects.

Recent downward trends in enemployment rates and levels in the Kansas City Metropolitan Area should not be construed to mean that a definite downward trend has been established and that it will continue in the same direction in the future. Possible devaluation and balance of payments pressures, combined with accelerated upward movements in the general price level, may lead to a tax increase or a cut in federal expenditures that will cause a leveling-off of the unemployment rate.

8. Projection of Sectoral Employment Levels in 1975

As part of our overall study, we have made detailed employment projections to 1975 for the Kansas City Metropolitan Area economy. A discussion of these projections specially made for this study can be made by first presenting the results and then by explaining in general the method used to achieve these results.

1. Projection Results

Projected employment levels in 1975 by detailed economic sectors are presented in Table 1. General sectoral employment trends and projections are presented graphically in Figure 1. Our projections indicate that during the 1967-1975 period total employment in the Kansas City Metropolitan Area will grow by 68.3 thousand in all sectors of the economy, or by 14.11 percent.

Total nonagricultural employment, meanwhile, is projected to grow by 71.5 thousand or by 14.9 percent. Over a comparable period in the past, between 1959 and 1967, nonagricultural employment grew by 86.1 thousand or by 21.9 percent. In general, then, our projections indicate that the Kansas City Metropolitan Area economy will continue to grow at a rapid rate. Both the volume and the rate of this anticipated growth, however, will be slightly less than that experienced between 1959 and 1967.

Our employment projections are compared in Table 5 with two other sets of projections available for the Kansas City Metropolitan Area: (a) The National Planning Association (NPA) projections to 1975 recently made for 224 metropolitan areas, including

*Refer to U.S. Bureau of Labor Statistics, Employment and Earnings and Monthly Report of the Labor Force, Vol. 14, No. 3 (September, 1967), p. 39; Missouri Division of Employment Security, Kansas City Labor Trends (May, July, 1967), p. 2. Seasonally adjusted unemployment rates for the Kansas City Metropolitan Area are not available.

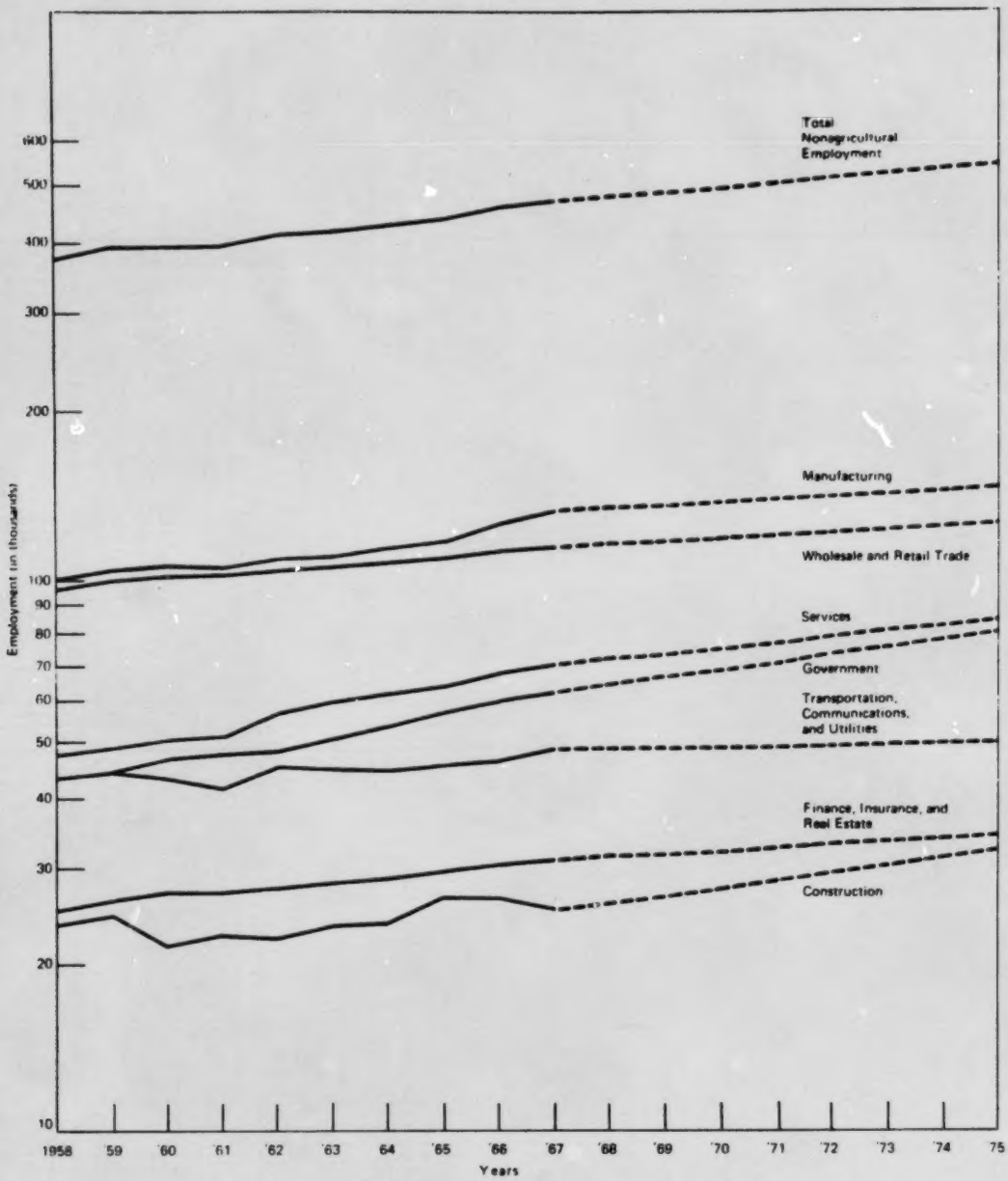


FIGURE 1 KANSAS CITY METROPOLITAN AREA EMPLOYMENT TRENDS AND PROJECTIONS

TABLE 5
COMPARISON OF ARTHUR D. LITTLE, INC., EMPLOYMENT PROJECTIONS TO 1975 WITH OTHER PROJECTIONS
(Kansas City Metropolitan Area)

SIC*	Industry Description	THOUSANDS OF EMPLOYED PERSONS		
		Arthur D. Little, Inc. Projections[a]	National Planning Association[b]	City Planning Department, Kansas City, Missouri[c]
A (01-09)	Agriculture, Forestry, and Fisheries	3.8[b]	3.8	n.a.
B (10-14)	Mining	0.8[b]	0.8	n.a.
C (15-17)	Contract Construction	31.8	38.4	n.a.
D (19-39)	Manufacturing	145.3	125.0	144.4
E (40-49)	Transportation, Communication, Electric, Gas and Sanitary Services	50.0	42.7	50.4
F (50-59)	Wholesale and Retail Trade	125.4	121.9	128.5
G (60-67)	Finance, Insurance, and Real Estate	33.9	42.9	n.a.
H (70-89)	Services	83.7	87.5	79.1
I (91-94)	Government	79.6	68.8	66.4
	TOTAL NONAGRICULTURAL EMPLOYMENT	550.5	538.0	n.a.

NOTES: *Standard Industrial Classification. n.a.: Not Available

[a]Refer to Table 1 and to the accompanying text.

[b]National Planning Association, Center for Economic Projections, *Economic and Demographic Projections for Two Hundred and Twenty-Four Metropolitan Areas, Industry Employment in 224 Metropolitan Areas,* Volume 1, Regional Economic Projections Series, Report No. 67-R-1 (Washington, D.C.: National Planning Association, May, 19).

[c]City Planning Department, Kansas City, Missouri, *Economic Base, Kansas City Metropolitan Area,* Part I, *Manufacturing and Agricultural Industries* (September, 1966), Table 22, p. 124; and Part II, *Trade, Transportation and Services* (June, 1967). Projections have been made to the year 1990. We have, therefore, interpolated the implied 1975 figures, by first computing the average annual growth rates implicit in the 1990 projections and then applying these individual sectoral growth rates to the 1967 employment levels. For our interpolation, we used the "most likely" 1990 projections given in the sources cited above.

Kansas City, and (b) the Kansas City, Missouri, City Planning Department (KC-CPD) projections to 1990 that we interpolated to 1975. While the NPA projections are available only to the major economic sectors and no detailed projections are given for the manufacturing industries (see Table 6), the KC-CPD projections are incomplete in the sense that projections of employment in such major sectors as construction and finance-insurance-real estate are not given. In addition, no KC-CPD projections are available for many individual manufacturing industries (see Table 7).

As Table 5 illustrates, our projections of total employment in 1975 in the Kansas City Metropolitan Area is greater than the NPA projection by 22.5 thousand. The NPA projections are quite conservative, particularly for the manufacturing sector. For example, the NPA projected manufacturing employment in 1975 is 125.0 thousand, which is lower than the actual 1966 manufacturing employment level. The interpolated KC-CPD 1975 manufacturing employment, on the other hand, comes very close to our projection. It is difficult to ascertain the validity of the KC-CPD projection, however, since no detailed explanation is given on how this particular projection was made.

Further comparisons show that our employment projections are higher than the NPA projections in three sectors (i.e., transportation-communication-utilities), wholesale and retail trade, and government) and slightly lower in three remaining sectors (i.e., construction, finance-insurance-real estate, and services).

Of the estimated number of about 71.5 thousand new nonagricultural jobs, 17.7 thousand are expected to be generated at all levels of government, 15.0 thousand in services, 14.9 thousand in manufacturing, 11.2 thousand in wholesale and retail trade, 7.3 thousand in construction, 3.5 thousand in finance-insurance-real estate, and 1.7 thousand in transportation-communication-utilities. As noted earlier, the relatively small growth anticipated in this last sector reflects the net result of upward trends in air transportation and communication and slow growth rates and downward trends in other segments of this sector, such as in local passenger transportation, trucking and warehousing, water transportation, utilities, etc.

Within the manufacturing sector, 9.8 thousand of the 14.9 thousand new jobs will be generated by the durable goods industries and the remaining 5.1 thousand by the nondurable goods industries. Much of the growth in manufacturing is anticipated to take place in the chemicals industry, electrical and nonelectrical machinery industries, and in other durable goods industries, such as ordnance and accessories, instruments, and miscellaneous manufacturing.

Past and projected comparative growth rates for the periods 1959-1967 and 1967-1975 are summarized in Table 8 for each sector. It will be observed that in *relative* terms, government, services, construction, and mining sectors will experience the highest growth rates, followed by the manufacturing finance-insurance-real estate, wholesale and retail trade, and transportation-communication-utilities sectors. Projected rates of decline in such manufacturing industries as transportation equipment, involving mostly the assembly of motor vehicles, parallel anticipated national employment trends and reflect the effects of laborsaving technological developments that will be particularly significant in the motor

TABLE 6
KANSAS CITY METROPOLITAN AREA EMPLOYMENT TRENDS AND PROJECTIONS TO 1975

Standard Industrial Classification (SIC)	Industry Description	THOUSANDS OF EMPLOYED PERSONS					PERCENT COMPOSITION				
		1950	1957	1960	1962	1975	1950	1957	1960	1962	1975
Division A (01,07,08,09)	Agriculture, Forestry, and Fisheries	11.8	8.8	7.8	5.4	3.8	3.20	2.20	1.83	1.21	0.71
Division B (10-14)	Mining	.7	.7	.9	.8	.8	0.19	0.18	0.21	0.18	0.15
Division C (15-17)	Contract Construction	20.5	24.8	27.1	27.5	38.4	5.57	6.21	6.36	6.16	7.22
Division D (19-39)	Manufacturing	88.5	100.9	105.8	110.7	125.0	24.03	25.28	24.83	24.80	23.51
Division E (40-49)	Transportation, Communication, Electric. Gas, and Sanitary Services	43.1	45.3	42.8	43.2	42.7	11.70	11.35	10.04	9.68	8.03
Division F (50-59)	Wholesale and Retail Trade	111.8	111.6	113.8	118.1	121.9	30.36	27.96	26.70	26.46	22.92
Division G (60-67)	Finance, Insurance, and Real Estate	20.3	23.8	28.4	29.3	42.9	5.51	5.96	6.66	6.56	8.07
Division H (70-89)	Services	45.2	50.8	58.0	62.2	87.5	12.27	12.72	13.61	13.93	16.45
Division I (91-94)	Government	26.4	32.5	41.6	49.2	68.8	7.17	8.14	9.76	11.02	12.94
	TOTAL	368.3	399.2	426.2	446.4	531.8	100.00	100.00	100.00	100.00	100.00

NOTE: For years 1950, 1957, and 1960, Kansas City SMSA is defined to include Clay and Jackson Counties in Missouri and Johnson and Wyandotte Counties in Kansas. The employment series shown here represent a count of persons employed in the area, and employment is defined in terms of place of work, not in terms of residence. Employment is further defined to include not only wage and salary workers but also the self-employed, household workers and unpaid family workers.

Source: National Planning Association, Center for Economic Projections, *Economic and Demographic Projections for Two Hundred and Twenty-Four Metropolitan Areas, Industry Employment in 224 Metropolitan Areas,* Volume 1, Regional Economic Projections Series, Report No. 67-R-1 (Washington, D.C.: National Planning Association, May, 1967).

TABLE 7
PROJECTIONS OF EMPLOYMENT IN THE KANSAS CITY METROPOLITAN AREA IN 1990

Standard Industrial Classification (SIC)		Industry Description	EMPLOYMENT PROJECTIONS – 1990		
			Alternative I "Most Likely"	Alternative II	Alternative III
A	(01-09)	Agriculture, Forestry, and Fisheries	n.a.	n.a.	n.a.
B	(10-14)	Mining	n.a.	n.a.	n.a.
C	(15-17)	Contract Construction	n.a.	n.a.	n.a.
D	(19-39)	Manufacturing	170,000	n.a.	n.a.
		Durable Goods	n.a.	n.a.	n.a.
	24-25	Lumber and furniture	n.a.	n.a.	n.a.
	33-34	Primary and fabricated metal products	6,200	5,700	5,850
	35	Machinery, except electric	13,600	11,500	16,900
	37	Transportation equipment	18,700	17,300	25,200
		Other Durable Goods	n.a.	n.a.	n.a.
	19	Ordnance and accessories	5,500	n.a.	n.a.
	38	Instruments	n.a.	n.a.	n.a.
	39	Miscellaneous manufacturing industries	n.a.	n.a.	n.a.
	32	Stone, clay, glass and concrete products	7,700	7,500	9,500
	36	Machinery, electrical	20,500	14,400	57,500
		Nondurable Goods	15,000	7,600	19,500
	20	Food and kindred products	7,200	5,300	9,600
	22-23	Textiles, apparel, and related products	15,000	18,100	22,100
	27	Printing and publishing	9,000	6,900	11,100
	28	Chemicals and allied products	n.a.	n.a.	n.a.
		Other Nondurable Goods	n.a.	n.a.	n.a.
	21	Tobacco	n.a.	n.a.	n.a.
	30	Rubber and misc. plastic products	n.a.	n.a.	n.a.
	31	Leather and leather products	n.a.	n.a.	n.a.
	26	Paper and allied products	4,600	6,100	7,500
	29	Petroleum refining and related industries	1,200	900	1,700
E	(40-49)	Transportation, Communication, Electric, Gas, and Sanitary Services	59,200	n.a.	n.a.
F	(50-59)	Wholesale and Retail trade	153,990	n.a.	n.a.
G	(60-67)	Finance, Insurance, and Real Estate	n.a.	n.a.	n.a.
H	(70-89)	Services	106,600	n.a.	n.a.
I	(91-94)	Government	83,200	n.a.	n.a.

Source: City Planning Department, Kansas City, Missouri, *Economic Base, Kansas City Metropolitan Area*, Part I, *Manufacturing and Agricultural Industries* (September, 1966), Table 22, p. 124; and Part II, *Trade, Transportation, and Services* (June, 1967).

TABLE 8
EMPLOYMENT GROWTH RATES IN THE KANSAS CITY METROPOLITAN AREA – 1959-1967 AND 1967-1975*

Standard Industrial Classification (SIC)	*Industry Description*	*Percent Growth 1959-1967*	*Projected Percent Growth 1967-1975*
A (01-09)	Agriculture, Forestry, and Fisheries	n.a.	-45.71
B (10-14)	Mining	-40.00	33.33
C (15-17)	Contract Construction	1.24	29.80
D (19-39)	Manufacturing	29.21	11.43
	Durable Goods	38.67	12.71
24-25	Lumber and furniture	-24.24	-32.00
33-34	Primary and fabricated metal products	12.88	- 2.68
35	Machinery, except electrical	115.09	29.82
37	Transportation equipment	15.38	- 4.67
	Other Durable Goods	60.10	24.92
19	Ordnance and accessories		
38	Instruments	- 5.79	
39	Miscellaneous manufacturing industries		
32	Stone, clay, glass and concrete products	21.95	
36	Machinery, electrical	267.39	
	Nondurable Goods	10.81	9.51
20	Food and kindred products	-20.12	11.11
22-23	Textiles, apparel, and related products	- 5.41	- 5.71
27	Printing and publishing	35.71	6.77
28	Chemicals and allied products	95.92	58.33
	Other Nondurable Goods	8.79	5.05
21	Tobacco		
30	Rubber and misc. plastic products	61.90	
31	Leather and leather products		
26	Paper and allied products	2.17	
29	Petroleum refining and related industries	-25.00	
E (40-49)	Transportation, communication, electric, gas, and sanitary services	7.81	3.52
F (50-59)	Wholesale and retail trade	15.24	9.81
G (60-67)	Finance, Insurance, and Real Estate	17.37	11.51
H (70-89)	Services	39.92	21.83
I (91-94)	Government	38.79	28.59

NOTES: *Arthur D. Little, Inc., projections (Refer to Table 1).

n.a.: Not Available

vehicles and parts, and the aircraft and parts industry groups, Similarly, the slight anticipated decline in the primary and fabricated metals industries reflect continued national trends in output per production worker, resulting from increasing use of the basic oxygen furnace and the continuous casting process, the greater use of instruments to control production, continued mechanization of materials handling operations, and other innovations.

2. General Projection Method

Traditionally, an "open" economy such as that of Kansas City is viewed in terms of a set of "export" or "basic" sectors that ship their goods and services outside the metropolitan area, and in terms of "nonbasic" sectors that are thought to depend for their existence and growth completely on the "basic" sectors. In this traditional tupe of distinction, the "basic" sectors are generally considered as the "engine" of local economic growth.

The "basic-nonbasic" dichotomy is often used in urban and region economic analysis, particularly in making employment projections. Here, once the "basic" industry employment levels are projected to a certain year in the future, a historically derived "basic-nonbasic" ratio is used to estimate local employment in the "nonbasic" sectors.

In our own work, we have departed drastically from this approach, which is based on simplistic assumptions that are economically untenable. In our work, we have viewed the economy of the Kansas City Metropolitan Area as a "system" of a complex set of interrelationships and have attempted to pinpoint these interrelationships by using modern statistical methods. Thus, in order to trace these economic interrelationships and to express them in statistically valid quantitative terms, we have developed an econometric model which consists of a set of multiple regression equations. In a given equation, a dependent variable, such as employment in the services sector, is viewed as a function of a number of independent variables, such as the metropolitan area population, per capita personal income, and total manufacturing employment.

Total projected manufacturing employment itself is built up from projecting individual industry employment levels, each of which is made a function of both regional and national economic variables. For examples, employment in the paper and allied products industry is made a function of employment in the national paper and allied products industry as well as a function of local employment in the printing, publishing, and allied industries. This means that the individual industry projections had to be accomplished in a sequential manner. For example, employment in the printing, publishing, and allied industries had to be projected before the paper and allied products industry.

In the same way, once employment projections are made for the individual manufacturing sectors, their combined total is used in projecting employment levels in other sectors, such as construction, wholesale and retail, etc. In order to project the employment level in the services sector, for example, projections of total manufacturing employment, per capita personal income in Kansas and Missouri combined, and Kansas City SMSA population would first had to be projected. Projection of employment in the services sector is then used, together with other variables, in projecting employment for the construction

sector. In this way, we have attempted to cut through the maze of economic interrelationships to represent what is essentially a simultaneous economic system in a recursive manner.

From the viewpoint of orthodox econometric theory, there are, to be sure, numerous problems that are difficult to overcome. The problem of multicollinearity, to cite one example, is a real one, as the independent variables used are usually not completely independent but move together. Despite some of these problems, which should be recognized, we believe that the projective system we have developed and implemented is at the forefront of methodology used today in urban and regional economic analysis.

The net of economic interrelationships that we have studied in constructing our projective model is illustrated graphically in Figure 2. The statistical relationships that we have finally used in making employment projections are presented in Appendix A. In general, we have used historical data for the period 1958 to 1966 in our statistical analysis; these are also explained in Appendix A.

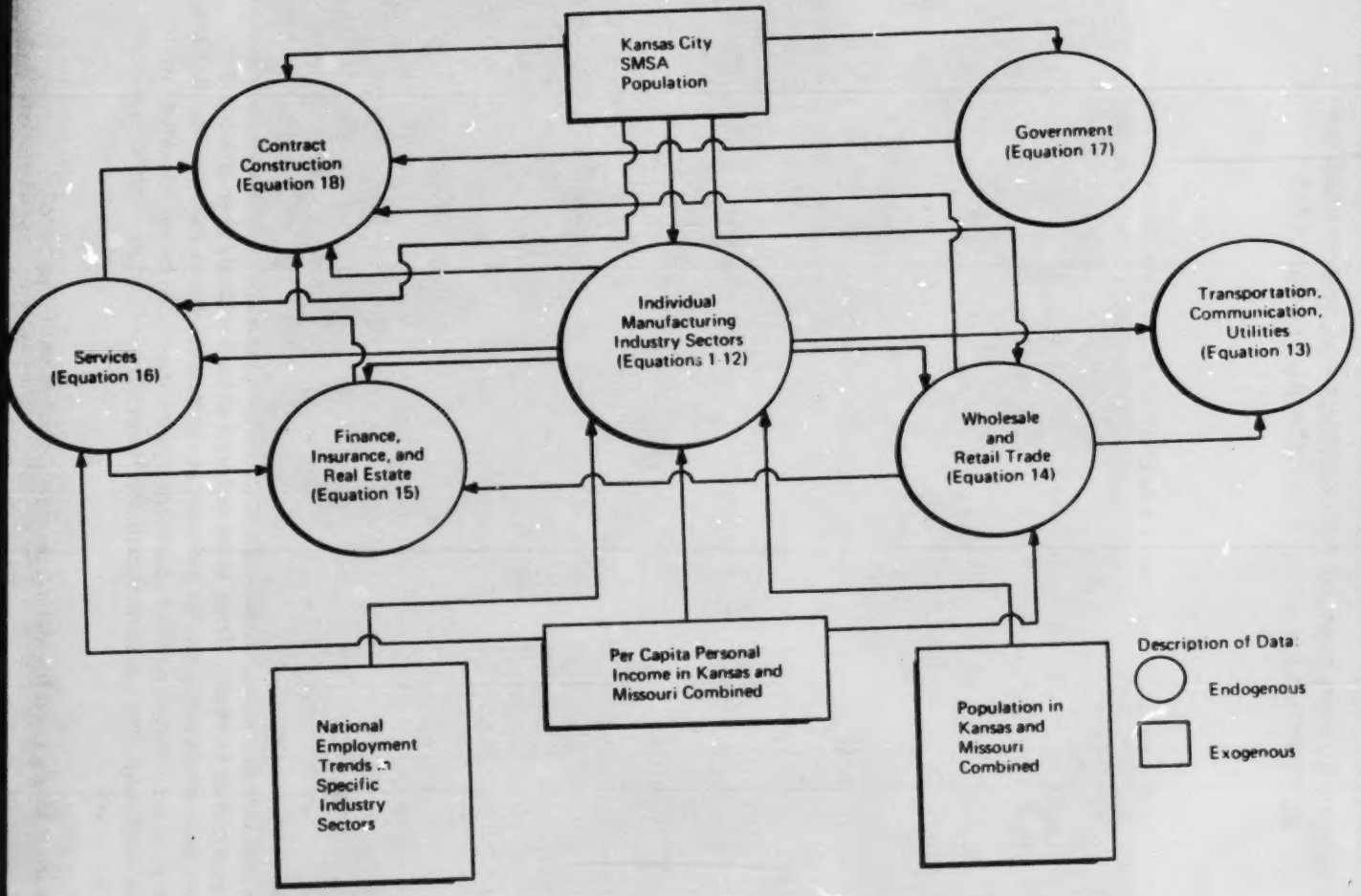

Kansas City SMSA Population
Contract Construction (Equation 18)
Government (Equation 17)
Services (Equation 16)
Individual Manufacturing Industry Sectors (Equations 1-12)
Transportation, Communication, Utilities (Equation 13)
Finance, Insurance, and Real Estate (Equation 15)
Wholesale and Retail Trade (Equation 14)
Per Capita Personal Income in Kansas and Missouri Combined
National Employment Trends in Specific Industry Sectors
Population in Kansas and Missouri Combined
Description of Data:
Endogenous
Exogenous

FIGURE 2 GENERAL DIAGRAMMATIC PRESENTATION OF RELATIONSHIPS USED IN THE PROJECTION MODEL

APPENDIX A - EMPLOYMENT PROJECTIONS FOR THE KANSAS CITY METROPOLITAN AREA: STATISTICAL BACKGROUND

Introduction:

In this appendix, we present a description of the basic statistical method used in making sectoral employment projections for the Kansas City Metropolitan Area, the results of our empirical statistical work consisting of a set of multiple-regression equations that were used in making the projections, and finally, a description of the data sources that were used in our empirical work.

Description of the Basic Statistical Method:

The application of modern statistical methods in the study of relationships between economic variables for the purpose of prediction is an essential feature of econometrics. A statistical method often used in econometric analysis is the least-squares or regression method, detailed explanations of which can be found in standard textbooks. In our work, we have used both the basic linear regression and the multiple-regression method. In general, the multiple-regression equations used have the following form:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \ldots + b_nX_n,$$

where Y represents the dependent variable that is to be predicted and X_1, X_2, etc., represent the independent or explanatory variables. The constant "a" represents the intercept on the Y-axis and is called the regression constant, and b_1, b_2, etc., are called the regression coefficients. These statistical parameters are empirically derived through time-series analysis on the set of the dependent and the independent variables.

In our analysis, we have generally used the basic multiple-regression equation form given above. In certain cases, we have adopted the "semi-logarithmic" equation form, which focuses on relative percentage changes rather than on linear changes, where this practice led to better statistical results in terms of the goodness of fit and where the functional form inherent in semi-logarithmic formulation tended to best express the anticipated dampening or acceleration of economic trends in the future. The post-Vietnam economy, for example, will undoubtedly display different growth patterns in certain economic sectors than in others. Thus, some sectors that have recently been growing at a faster pace than others will grow, for instance, at a somewhat slower pace as a result of the termination of the Vietnam conflict. Such anticipated trends can be incorporated into the projective mechanism through semi-logarithmic formulation of certain functional relationships in the model.

The Statistical Model Used for Making Sectoral Employment Projections:

The set of multiple-regression equations presented in Table A-1 comprises the statistical model used in making sectoral employment projections to 1975 for the

six-county Kansas City Metropolitan Area. The regression equations are presented for each sector in the following general format:

(a) The form of the regression equation,

(b) Definition of the independent variables used in the regression equation and the units (multiples of ten) in which they are expressed (e.g., in thousands, ten thousands, etc.). The independent variables are expressed in multiples of ten in order to keep the respective magnitudes involved in the time-series analysis within reasonable reach of each other and thus to estimate the statistical parameters more precisely. The "Y" in each equation stands for the employment in each of the 18 sectors, which are separately identified just prior to the presentation of each respective forecasting equation.

(c) R^2 (R-squared), which is the coefficient of determination and, as a statistical measure, indicates the variance of the dependent variable "explained" by the variance of the independent variable(s).

(d) The period covered in the empirical statistical analysis, if it differs from the 1958-1967 period generally used in our work.

It should be noted that the particular equations used in making sectoral employment projections were selected after an exhaustive statistical investigation focusing on alternative statistical relationships and combinations. We feel that the final set of multiple-regression equations selected for the purpose of making sectoral employment projections best reflects the observable patterns of economic relationship and most realistically indicates future directions and rates of charge. In such an analysis, it is impossible to take into account all possible factors that contribute to economic growth or detract from it. Nevertheless, a substantial part of the more important relationships are observable, and in our work we have attempted to measure these relationships and incorporate them into a framework for making economic projections.

We should mention that projections of employment for the agriculture-forestry-fisheries and mining sectors are not included in our work. These projections, as presented in the main part of our report, have been made separately available in a recently completed study by the National Planning Association.*

*National Planning Association, Center for Economic Projections, Economic and Demographic Projections for Two Hundred and Twenty-Four Metropolitan Areas, Industry Employment in 224 Metropolitan Areas, Volume 1, Regional Economic Projections Series, Report No. 67-P-1 (Washington, D.C.: National Planning Association, May, 1967).

APPENDIX B – LIST OF REGRESSION EQUATIONS

1. Food and Kindred Products (SIC* 20)

   a) $Y = 481.99783 - 0.630X_1 + 0.297X_2$

   b) X_1 = Population of Kansas and Missouri (in units of ten thousands).

      X_2 = National employment in the meat products industry (in units of thousands).

   c) $R^2 = 0.74173$

2. Apparel and Related Products (SIC 23)

   a) $Y = 123.07699 - 0.63X_1 - 0.008X_2$

   b) X_1 = Population in Kansas and Missouri (in units of ten thousands).

      X_2 = National employment in the apparel and accessories industry (in units of thousands).

   c) $R^2 = 0.96125$

3. Lumber and Wood Products, Furniture and Fixtures (SIC 24, 25)

   a) $Y = 6.74376 + 0.040X_1 - 1.952X_2$

   b) X_1 = National employment in the lumber and wood products, furniture and fixtures industries (in units of thousands)

      X_2 = Time (1958 = 1, 1959 = 2, etc.).

   c) $R^2 = 0.89130$

4. Printing, Publishing and Allied Industries (SIC 27)

   a) $Y = 1584.61217 - 4.433 \log X_1 + 253.295 \log X_2 - 3.831 \log X_3$

   b) X_1 = Per capita personal income in Kansas and Missouri combined (in constant 1960 dollars).

      X_2 = National employment in the printing, publishing and allied industries (in units of thousands).

      X_3 = Time (1958 = 1, 1959 = 2, etc.)

   c) $R^2 = 0.98370$

*Standard Industrial Classification

5. Paper and Allied Products (SIC 26)

a) $Y = -528.15861 + 87.899 \log X_1 - 41.300 \log X_2$

b) X_1 = National employment in the paper and allied products industry (in units of hundreds).

X_2 = Kansas City SMSA employment in printing and publishing (in units of hundreds).

c) $R^2 = 0.53797$

6. Chemicals and Allied Products (SIC 28)

a) $\log Y = 1.03847 + 0.038X_1$

b) X_1 = National employment in the chemicals and allied products industry (in units of ten thousands).

c) $R^2 = 0.87783$

7. Tobacco, Textile Mill Products, Petroleum Refining and Related Industries, Rubber and Miscellaneous Plastics Products (SIC 21,22,29,30)

a) $Y = -13.05983 + 0.041X_1$

b) X_1 = National employment in the miscellaneous plastics products, textile mill products, leather and leather products, petroleum and coal products, and other petroleum products industries (in units of thousands).

c) $R^2 = 0.68786$

8. Stone, Clay, Glass and Concrete Products (SIC 32)

a) $Y = 37.26903 - 0.048X_1 + 1.543X_2$

b) X_1 = Population of the Kansas City SMSA (in units of ten thousands).

X_2 = Time (1958 = 1, 1959 = 2, etc.)

c) $R^2 = 0.96474$

9. Primary and Fabricated Metal Products (SIC 33,34)

a) $Y = -423.12173 + 152.529 \log X_1 - 43.864 \log X_2$

b) X_1 = National employment in the primary and fabricated metal products industries (in units of ten thousands).

X_2 = National employment in the transportation equipment, ordnance and accessories, electrical machinery, instruments, miscellaneous manufacturing and non-electrical machinery industries (SIC 19, 35,36,37,38,39) (in units of ten thousands).

c) $R^2 = 0.75211$

10. Machinery, except Electrical (SIC 35)

a) $Y = -66.46192 + 0.079X_1 + 2.890X_2$

b) X_1 = National employment in the non-electrical machinery industry (in units of thousands).

X_2 = Time (1958 = 1, 1959 = 2, etc.)

c) R^2 = 0.99452

11. Transportation Equipment (SIC 37)

a) $Y = 41.05241 + 0.121X_1$

b) X_1 = National employment in the motor vehicles and equipment industry (in units of thousands).

c) R^2 = 0.64794

12. Ordnance and Accessories, Electrical Machinery, Instruments, and Miscellaneous Manufacturing Industries (SIC 19,36,38,39)

a) $Y = 72.23492 + 0.029X_1 + 10.358X_2$

b) X_1 = National employment in the ordnance and accessories, electrical machinery, transportation equipment, instruments, and miscellaneous manufacturing industries (SIC 19,36,38,39) (in units of thousands).

X_2 = Time (1958 = 1, 1959 = 2, etc.).

c) R^2 = 0.87251

13. Transportation, Communication, Electric, Gas, and Sanitary Services (SIC 40-49)

a) $Y = 237.85485 + 0.097X_1$

b) X_1 = Kansas City SMSA employment in manufacturing and wholesale and retail trade (in units of hundreds).

c) R^2 = 0.66861

14. Wholesale and Retail Trade (SIC 50,52,53-59)

a) $Y = -4251.70484 + 388.939 \log X_1 + 104.328 \log X_2 + 249.041 \log X_3$

b) X_1 = Kansas City SMSA population (in units of hundreds).

X_2 = Per capita personal income in Kansas and Missouri combined (in 1960 dollars).

X_3 = Kansas City SMSA employment in manufacturing (in units of hundreds).

c) R^2 = 0.98760

15. Finance, Insurance and Real Estate (SIC 60-67)

a) $Y = 69.73870 + 0.760X_1$

b) X_1 = Kansas City SMSA employment in total manufacturing + wholesale and retail trade + services (in units of thousands).

c) $R^2 = 0.95605$

16. Services (SIC 70-89)

a) $Y = -241.57349 + 0.488X_1 + 0.118X_2 - 0.29X_3$

b) X_1 = Kansas City SMSA population (in units of hundreds).

X_2 = Per capita personal income in Kansas and Missouri combined (in 1960 dollars).

X_3 = Kansas City SMSA employment in total manufacturing (in units of hundreds).

c) $R^2 = 0.95728$

17. Government (SIC 91-94)

a) $Y = -183.91508 + 96.392 \log X_1 + 0.406 \log X_2$

b) X_1 = Kansas City SMSA population (in units of ten thousands).

X_2 = Time (1958 = 1, 1959 = 2, etc.)

c) $R^2 = 0.95837$

18. Construction (SIC15-17)

a) $Y = -1565.01564 + 306.246 \log X_1$

b) X_1 = Kansas City SMSA employment in manufacturing + wholesale and retail trade + services + finance, insurance and real estate + government (in units of thousands).

c) $R^2 = 0.84447$

d) Historical data used covers the period 1962-1966.

Data Sources

Presented below is a list of the types of data used in our empirical statistical analysis and the sources from which they were obtained:

(1) *Sectoral Employment Data for the Kansas City Metropolitan Area:*

(a) *1958-1966:* U. S. Bureau of Labor Statistics, *Employment and Earnings Statistics for States and Areas 1939-66,* Bulletin No. 1370-4 (Washington, D. C.: U. S. Government Printing Office, July, 1967), pp. 406-409.

(b) *1967:*

January: Missouri Division of Employment Security, *Kansas City Labor Trends* (May, 1967).

February: U. S. Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force,* Vol. 14, No. 11 (May, 1967), pp. 58-59.

April: Ibid, Vol. 14, No. 1 (July, 1967), pp. 58-59.

March, May: Missouri Division of Employment Security, *Kansas City Labor Trends,* (July, 1967).

June, July: U. S. Bureau of Labor Statistics, *Employment and Earnings and Monthly Report on the Labor Force,* Vol. 14, No. 3 (September, 1967), pp. 82-83.

(2) *Kansas City SMSA Population:*

(a) *1958, 1959, 1966:* The Kansas City Star, Market Research Department, *Basic Economic Data: A Report on the Kansas City Metropolitan Area,* (July, 1966), p. 7.

(b) *1960-1964:* U. S. Bureau of the Census, *Current Population Reports,* "Estimates of the Population of the Largest Standard Metropolitan Statistical Areas: 1960 to 1964," Series P-25, No. 330 (March 21, 1966), p. 15.

(c) *1965:* U. S. Bureau of the Census, *Current Population Reports,* "Estimates of the Population of Standard Metropolitan Statistical Areas: July 1, 1965," Series P-25, No. 371 (August 14, 1967), p. 22.

The population figures for the 1958-1961 period were adjusted because of the SMSA (Standard Metropolitan Statistical Area) definitional changes that occurred in 1962, when Platte and Cass Counties in Missouri were added to the four-county (Johnson and Wyandotte Counties in Kansas and Clay and Jackson Counties in Missouri) Kansas City SMSA.

(d) *1975:* City Planning Department, Kansas City, Missouri. At the time these projections were made, the population projections made by the Metropolitan Planning Commission-Kansas City Region were not available. Later, when these projections were made available, we found that projections of population were not given for Johnson and Wyandotte Counties in Kansas for the year 1975.

(3) *National Employment Data:*

(a) *1958-1966:* U. S. Bureau of Labor Statistics, *Employment and Earnings Statistics for the United States, 1909-1965* (Washington, D. C.: U. S. Government Printing Office, October, 1966).

(b) *1966:* U. S. Bureau of Labor Statistics, *Monthly Labor Review,* Vol. 90, No. 4 (April 1, 1967), pp. 82-85.

(c) *1975:* U. S. Department of Labor, *Tomorrow's Manpower Needs* (Draft Copy, Limited Distribution, 1967), pp. 807-818.

(4) *Data on Population of Kansas and Missouri Combined:*

(a) *1958-1960:* U. S. Bureau of the Census, *Current Population Report,* Series P-25, No. 304 (April 8, 1965), p. 10.

(b) *1961: Ibid.,* No. 267 (May 28, 1963), p. 4.

(c) *1962: Ibid.,* No. 280 (March 2, 1964), p. 4.

(d) *1963: Ibid.,* No. 294 (Nov. 5, 1964), p. 6.

(e) *1964-1965: Ibid.,* No. 317 (August 27, 1965).

(f) *1966-1967: Ibid.,* No. 373 (September 5, 1967).

(g) *1975: Ibid.,* "Illustrative Projections of the Population of States: 1970 to 1985," Series 25, No. 326 (February 7, 1966), Series II-D Projections.

(5) *Per Capita Personal Income in Kansas and Missouri Combined:*

(a) *1958-1967:* The historical data for this period were computed by Arthur D. Little, Inc., based on the following types of data and data sources:

(i) Personal Income Data by States: 1958-1966: *Survey of Current Business,* Vol. 47, No. 8 (August, 1967), p. 30.

(ii) Price Deflators for Personal Income Series: U. S. Department of Commerce, *Office of Business Economics, The National Income and Product Accounts of the United States, 1929-1965, A Supplement to the Survey of Current Business* (Washington, D. C.: U. S. Government Printing Office, 1966), p. 156: *Survey of Current Business,* Vol. 47, No. 7 (July, 1967), p. 41.

(b) *1975:* Computed from National Planning Association, Center for Economic Projections, *Economic and Demographic Projections for Two Hundred and Twenty-Four Metropolitan Areas,* Vol. II, Regional Economic Projections Series, Report No. 67-R-1 (Washington, D. C.: National Planning Association, 1967).

II. MANPOWER REQUIREMENTS OF THE KANSAS CITY METROPOLITAN AREA ECONOMY: PROJECTIONS TO 1975

1. Introduction

Careful quantitative analysis of manpower needs as a basis for community-wide vocational educational planning is essential in maintaining and enhancing the economic well-being of any metropolitan area. On the one hand, an adequate supply of skilled manpower is vital to the smooth functioning and unencumbered growth of a metropolitan area economy; on the other, the profile of an area's manpower demand reflects its economic characteristics and dynamics and represents the income earning base of the local demand for the goods and services produced by the metropolitan area economy.

In determining the quantitative dimensions of the manpower needs of the Kansas City Metropolitan Area economy for the purpose of developing precise guidelines for vocational educational planning in the new community college system, we have taken a comprehensive "manpower requirements" approach. This approach is relatively new and is currently in a state of development due to the simultaneous efforts of many researchers. Our work representa a unique contribution to local manpower research, in terms of both its comprehensiveness and its utilization of most recent national information pertaining to technological developments and shifts in the detailed manpower requirements of industries.

In order to translate the results of our detailed "manpower requirements" study into the operational process of determining specific vocational educational curriculum plans for the new community college system, we have conducted in-depth interviews with leading industries, businesses, and other organizations in the Kansas City Metropolitan Area. The results of these interviews are separately reported in this report.

In what follows, we present the basic results of our research on the manpower requirements of the Kansas City Metropolitan Area economy, with projections up to 1975. A general summary of our findings is followed by more detailed aspects of our study, covering the methods employed and the basic results achieved in determining both the replacement and the expansion needs of the local economy. Detailed technical aspects of our work are separately presented in the Appendix at the end of the chpater.

2. Summary of Our Findings

The expanding economy of the Kansas City Metropolitan Area in the 1960's and early 1970's requires 22,005 new employees every year just to keep pace with replacement and expansion requirements. Replacement requirements, stemming from death, retirement, transfers, and other losses, are estimated at an average of 11,946 employees a year, while expansion requirements due to economic growth are estimated to be about 10,059 employees a year. These estimates reflect only *average* annual manpower requirements

during the fifteen year period between 1960 and 1975; they do not represent predictions of new manpower requirements for *any* given year, since actual requirements during fast and slow growth years will naturally deviate from these estimated average levels.

Average annual requirements for new manpower in different occupational groups are quite different, reflecting important changes in the occupational composition of the Kansas City Metropolitan Area economy in response to different rates of employment growth among industries and to technological changes. Of the net total average annual manpower requirements, an estimated 18.1 percent is for professional, technical, and kindred workers, 26.3 percent for clerical and kindred workers, 11.2 percent for craftsmen, foremen and kindred workers, 8.6 percent for managers, officials, and proprietors (except farm), 7.3 percent for salesworkers, 12.9 percent for operatives and kindred workers, 14.1 percent for service workers, and, finally, 1.4 percent for laborers.

The manpower requirements of the Kansas City Metropolitan Area economy by eight broad occupational groups and by 27 detailed, specific occupational categories which best lend themselves for educational training at a community college system are presented in Table 9. As shown here, for example, the total annual need for new professional nurses averages 368, compared with 1,567 secretaries, typists, and stenographers, 69 electricians, and 27 compositors and typesetters.

These findings generally reflect the broad structural shifts occurring in the occupational composition of employment during this fifteen year period, as summarized in Table 10. All the fast growing occupational groups, such as service workers (41.8%), clerical and kindred workers (46.3%), and professional-technical-kindred workers (79.0%), are also the ones that are increasing their relative share of total employment. In 1960, these three occupational groups accounted for 43.6 percent of total employment. By 1975, their combined share is expected to reach 48.8 percent. Other occupational groups, meanwhile, are declining in their relative share of total employment, although in absolute terms they are all growing by 21 to 36 percent during this fifteen year period. The only exception to this trend is the occupational group labeled laborers, which is actually declining in absolute terms by 5 percent during this period, in addition to its decline in its share of total employment from 5.3 percent in 1960 to 3.6 percent in 1975.

3. The "Manpower Requirements" Approach to Vocational Educational Planning: A Methodological Overview

Basically, our "manpower requirements" approach takes a systematic and economy-wide look at existing and future occupational composition of employment by breaking down all local economic activities into unambiguously defined and mutually exclusive economic sectors and then studying in detail the demand for employment in a given occupation by each or all economic sectors, as well as the supply of labor in a given occupation in each or all economic sectors, The "manpower requirements" approach, then, provides a consistent, comprehensive, operational and inexpensive framework for the analysis and projection of local economy-wide or sectoral demand for and supply of employment by detailed occupational categories. This framework has an added advantage

TABLE 9
AVERAGE ANNUAL MANPOWER REQUIREMENTS BY OCCUPATION
KANSAS CITY METROPOLITAN AREA ECONOMY – 1960-1975

Occupation	Net Total Average Annual Requirements	Replacement Requirements[a]	Expansion Requirements[b]
TOTAL	22,005	11,946	10,059
Professional, Technical, and Kindred Workers	3,989	1,475	2,514
Accountants and Auditors	224	117	107
Designers and Draftsmen	109	20	89
Surveyors	u	u	u
Dietitians and Nutritionists	11	u	u
Nurses, Professional	368	186	182
Photographers	12	u	u
Radio Operators	32	u	28
Technicians: Medical and Dental	171	39	132
Electrical and Electronic; Other Engineering & Physical Sciences	160	24	136
Clerical and Kindred Workers	5,794	3,218	2,576
Bookkeepers	385	291	94
Office Machine Operators	594	187	407
Secretaries, Typists, Stenographers	1,567	898	669
Craftsmen, Foremen and Kindred Workers	2,470	1,121	1,349
Carpenters	120	90	30
Electricians	69	28	41
Machinists and Job Setters	86	44	42
Mechanics and Repairmen	837	254	583
Millwrights	20	10	10
Plumbers and Pipe Fitters	89	36	53
Stationary Engineers	62	44	18
Tinsmen, Coppersmiths, and Sheet Metal Workers	41	15	26
Toolmakers, and Die Makers and Setters	35	12	23
Compositors and Typesetters	27	33	(u)
Electrotypers and Stereotypers	n	n	(u)
Engravers, except Photoengravers	u	n	u
Opticians and Lensgrinders	u	u	u
Photoengravers and Lithographers	43	u	36
Pressmen and Plate Printers, Printing	42	15	27
Managers, Officials and Proprietors, except Farm	1,891	1,260	631
Salesworkers	1,613	1,100	513
Operatives and Kindred Workers	2,842	1,506	1,336
Service Workers	3,091	1,882	1,209
Laborers	313	384	-71

NOTES: u: under 10; (u) if negative
n: zero or very negligible; (n) if negative
[a]Due to death, retirement, transfers, and other losses.
[b]Requirements that are directly attributable to the growth or decline of the local economy.

Source: Tables 3 and 4.

TABLE 10
CHANGES IN THE GENERAL OCCUPATIONAL COMPOSITION OF EMPLOYMENT IN THE KANSAS CITY SMSA, 1960-1975*

Occupation	Number of Persons Employed 1960	Number of Persons Employed 1975 a	Percent Breakdown 1960	Percent Breakdown 1975	Percent Change in the Number of Persons Employed 1960-1975
Professional, Technical and Kindred Workers	47,714	85,426	11.9	15.5	79.0
Clerical and Kindred Workers	83,380	122,005	20.8	22.1	46.3
Craftsmen, Foremen and Kindred Workers	55,903	76,123	14.0	13.8	36.2
Managers, Officials and Proprietors, except Farm	42,209	51,664	10.5	9.4	22.4
Salesworkers	35,920	43,616	9.0	7.9	21.4
Operatives and Kindred Workers	70,617	90,653	17.6	16.5	28.4
Service Workers	43,402	61,533	10.9	11.2	41.8
Laborers	21,078	20,019	5.3	3.6	-5.0
TOTAL	400,223	551,039	100.0	100.0	37.7

NOTES: *Employment is expressed in U. S. Census of Population equivalent terms, rather than in U. S. Bureau of Labor Statistics (BLS) wages and salary employment terms. For an explanation of definitional differences, refer to the accompanying text.

[a]Significant to the nearest hundred.

Source: Tables 3 and 4.

in that it can be used many times over, with only minor additional data requirements, to update previous studies and projections.

It should be emphasized that our "manpower requirements" approach differs from the traditional "labor skill survey" method. In order to identify some of the major areas in which our approach differs from the traditional "labor skill survey" method, we should make a few comments on the latter.

In the past, local manpower skill surveys have been used rather extensively as a general guide in the development of vocational educational programs. Specifically, these surveys have been used to pinpoint current and short-term shortage and surplus in selected occupational or skill areas, as seen by employers; and this information has in turn been used in devising vocational training programs to provide the desirable mix of skills needed in the community. Typically, a manpower skill survey is conducted through mailed questionnaires or personal interviews, in which the employers included in the sample are asked to provide the following types of information: (1) recent and current employment, (2) forecasts of additional employment for certain periods, such as for two or five years; (3) existing job vacancies by occupation or skill, replacement needs for the next two to five years, how much of the replacement needs in each skill category will be supplied by already established or planned training programs, and which skills they anticipate will be in short supply; and finally (4) the expected impact of technological change on the skill levels of existing and new personnel and the emergence of new occupations or skills. In these surveys, stratified sampling procedures are usually used to select the firms to be included in the survey, and a major effort is made for maximum coverage of the largest employers.

Although they provide a lot of new and interesting information, the usefulness of local manpower skill surveys in vocational educational planning has been seriously questioned. First, these surveys are expensive, one-shot efforts that usually take a very short-term view of local economic shifts. Consequently, their usefulness as an operational, inexpensive, and continuous monitoring system of occupational or skill demand and supply situation in a community is severely limited. Secondly, the sample must be constructed very carefully if the results are to have any statistical validity. Many of the previous surveys suffer from a variety of technical deficiencies, some of which are difficult to overcome. Thirdly, it is not always easy to get the cooperation of the employers, and this leads to many no-response entries which are difficult to deal with. Fourthly, employer estimates of their needs cannot be given much weight, because they are subjective assessments that may differ from person to person depending on personal characteristics (caution, optimism, pessimism, etc) and they are made in the absence of any consistent and standardized definitional or classificational framework. Fifth, and lastly, the process of making community-wide statistical inferences from these surveys is beset with many difficulties and in fact, many of the previous surveys have skipped this crucial step completely. If the sample is properly devised, coverage both by employer size and by industry sector would be attempted. Since, however, different firms in the same employment size class in the same industry sector usually have different product lines (i.e., they do not have a "homogeneous good"), and since they are likely to use different production processes with different vintages of capital, then it would be difficult to generalize from any given part of the sample to its respective universe.

In summary, then, the chief advantage of our "manpower requirements" approach derives from the fact that it takes a global view of the entire metropolitan economy; it is systematic, consistent, comprehensive, and relatively inexpensive; and it provides a detailed understanding of long-range economic trends defined in unambiguous quantitative terms. The "manpower requirements" approach focuses on the demand side of the manpower supply-demand dynamics. The difference between the estimated average annual demand for new manpower in a given occupation *and* the average annual local supply of new employment in that occupation through the local educational system and vocational-training programs roughly shows up the "gap" that must be supplied through either in-migration or an increase in local supply. Usually, however, information on the local supply of new manpower by occupation is rather scanty or nonexistent. Still, the results of such a "manpower requirements" analysis serve a dire need in local vocational educational planning, by providing precise quantitative information on shifting demand patterns for different occupations in different industrial sectors. This type of data can be used in determining how much importance to give to vocational educational programs focusing on different occupational clusters and how to adjust such programs continually to changing occupational demand patterns within the metropolitan area economy.

The "manpower requirements" approach that we have developed and implemented in our study consists of four distinct phases of research: (a) Development of the base year (1960) occupation-by-industry employment matrix, (b) Development of the target year (1975) occupation-by-industry employment matrix, (c) Determination of average annual replacement requirements, and (d) Determination of average annual expansion requirements.

These four distinct research tasks were accomplished in a step-wise fashion. Once the fundamental 1960 occupation-by-industry employment matrix was developed, this information was used, in conjunction with employment projections, technological trends analysis, and national projections of the occupational structure of industry sectors, in developing the 1975 occupation-by-industry employment matrix. In order to determine average annual replacement requirements by each occupational category, the basic 1960 employment-by-occupation data generated in the first research task was translated into an occupation-by-age and sex matrix, to which were applied age-and-sex-specific average annual "separation" rates. In order to determine the average annual expansion requirements, the differences were found between the 1975 and 1960 matrices and these in turn were annualized.

In this part of our report, we present and interpret the results obtained from these four distinct but interrelated research tasks. While the results of the first two research tasks are fairly well presented in two tables (refer to Tables 11 and 12), the results of the latter two form the basis of our discussion and interpretation here. A detailed description of the methods and data sources used in accomplishing each of these four research tasks is reserved for the Appendix.

In order to avoid possible misinterpretation, we should point out that the employment information used in our manpower analysis definitionally differs from that

TABLE 11
KANSAS CITY DISTRIBUTION OF EMPLOYED PERSONS BY OCCUPATION AND INDUSTRY FOR 1960 (SIX COUNTIES ADJUSTED)

Occupation	Total	Agriculture, Forestry, Fisheries	Mining	Contract Construction
TOTAL EMPLOYED	400,223	7,884	814	22,535
Professional, Technical, and Kindred Workers	*47,714*	*229*	*49*	*1,367*
Accountants and Auditors	4,722	u	17	108
Designers and Draftsmen	1,820	u	u	153
Surveyors	155	n	u	38
Dietitians and Nutritionists	171	n	n	n
Nurses, Professional	3,990	n	u	u
Photographers	426	n	u	n
Radio Operators	495	u	u	12
Technicians: Medical and Dental	1,183	n	n	n
Electrical and Electronic	370	n	n	u
Other Engineering and Physical Sciences	1,146	n	n	21
Clerical and Kindred Workers	*83,380*	*158*	*86*	*1,442*
Bookkeepers	7,251	31	u	338
Office Machine Operators	4,544	u	u	46
Secretaries, Typists, Stenographers	18,738	55	38	501
Craftsmen, Foremen, and Kindred Workers	*55,903*	*56*	*202*	*11,435*
Carpenters	4,045	11	24	3,352
Electricians	1,919	n	n	747
Machinists and Job Setters	2,426	n	n	17
Mechanics and Repairmen	14,512	21	46	607
Millwrights	477	n	n	43
Plumbers and Pipe Fitters	2,016	n	23	1,220
Stationary Engineers	1,687	n	n	26
Tinsmen, Coppersmiths, and Sheet Metal Workers	1,067	n	n	276
Toolmakers, and Die Makers and Setters	755	n	n	n
Compositors and Typesetters	1,460	n	n	u
Electrotypers and Stereotypers	63	n	n	n
Engravers, except Photoengravers	96	n	n	n
Opticians and Lensgrinders	258	n	n	n
Photoengravers and Lithographers	350	n	n	n
Pressmen and Plate Printers, Printing	864	n	n	n
Managers, Officials and Proprietors, except Farm	*42,209*	*4,170*	*94*	*2,916*
Salesworkers	*35,920*	*72*	*32*	*126*
Operatives and Kindred Workers	*70,617*	*190*	*337*	*1,537*
Service Workers	*43,402*	*61*	*14*	*115*
Laborers	*21,078*	*2,948*	*n*	*3,595*

NOTES: u Under 10
n Zero or very negligible

TABLE 11 (Cont)

Occupation	Total Manufacturing	Total Durable Goods	Lumber & Wood Furniture	Metal Industries	Machinery Except Electrical	Transport Equipment	Other Durable Goods, Including Electrical	Electrical Machinery
TOTAL EMPLOYED	*104,657*	*53,362*	*2,594*	*19,931*	*6,787*	*11,776*	*12,274*	*5,434*
Professional, Technical, and Kindred Workers	*7,983*	*4,504*	*112*	*2,109*	*630*	*706*	*947*	*584*
Accountants and Auditors	1,110	548	20	206	94	117	111	51
Designers and Draftsmen	875	678	38	390	121	57	72	36
Surveyors	n	n	n	n	n	n	n	n
Dietitians and Nutritionists	u	u	n	n	n	n	u	u
Nurses, Professional	62	40	u	12	u	u	12	u
Photographers	102	27	n	u	u	u	u	u
Radio Operators	22	20	u	u	n	u	10	u
Technicians: Medical and Dental	18	n	n	n	n	n	18	n
Electrical and Electronic	210	210	n	113	n	u	89	89
Other Engineering & Physical Sciences	641	270	n	204	28	16	22	n
Clerical and Kindred Workers	*16,456*	*7,403*	*357*	*2,669*	*1,180*	*1,360*	*1,837*	*860*
Bookkeepers	1,308	488	32	123	90	79	164	55
Office Machine Operators	973	297	u	78	41	109	60	28
Secretaries, Typists, Stenographers	4,283	2,211	94	854	415	232	616	316
Craftsmen, Foremen, and Kindred Workers	*20,275*	*12,000*	*573*	*5,091*	*1,756*	*2,551*	*2,029*	*847*
Carpenters	254	175	61	46	u	43	17	u
Electricians	595	448	n	208	37	123	80	25
Machinists and Job Setters	1,794	1,560	28	682	472	185	193	94
Mechanics and Repairmen	3,549	2,442	29	702	405	864	442	167
Millwrights	400	301	u	156	36	67	34	13
Plumbers and Pipe Fitters	420	238	n	82	33	94	29	n
Stationary Engineers	843	478	u	249	70	76	76	41
Tinsmen, Coppersmiths, and Sheet Metal Workers	584	564	n	358	51	87	68	30
Toolmakers, and Die Makers and Setters	751	666	u	274	218	105	61	48
Compositors and Typesetters	1,354	46	u	u	u	u	25	u
Electrotypers and Stereotypers	61	u	n	n	u	n	n	n
Engravers, except Photoengravers	83	36	n	u	u	u	21	u
Opticians and Lensgrinders	109	109	n	u	n	n	108	u
Photoengravers and Lithographers	335	24	n	15	u	u	u	u
Pressmen and Plate Printers, Printing	833	25	n	u	u	u	u	u
Managers, Officials and Proprietors, except Farm	*6,909*	*3,139*	*247*	*981*	*573*	*389*	*949*	*336*
Salesworkers	*5,558*	*1,924*	*217*	*451*	*389*	*155*	*512*	*222*
Operatives and Kindred Workers	*40,063*	*20,806*	*845*	*7,045*	*2,011*	*5,995*	*4,910*	*2,357*
Service Workers	*1,994*	*1,072*	*38*	*407*	*60*	*287*	*280*	*92*
Laborers	*5,419*	*2,514*	*205*	*1,178*	*188*	*333*	*610*	*117*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 11 (Cont)

Occupation	Total Non-Durable Goods	Food & Kindred Products	Textile & Apparel	Printing & Publishing	Chemicals & Allied	Other Non-Durable Goods
TOTAL EMPLOYED	*51,295*	*15,883*	*7,305*	*11,435*	*6,339*	*10,333*
Professional, Technical, and Kindred Workers	*3,479*	*550*	*189*	*1,167*	*313*	*755*
Accountants and Auditors	562	145	21	80	109	207
Designers and Draftsmen	197	u	85	61	23	19
Surveyors	n	n	n	n	n	n
Dietitians and Nutritionists	u	n	n	n	u	n
Nurses, Professional	22	u	u	u	u	u
Photographers	75	n	n	70	u	u
Radio Operators	u	u	n	n	n	u
Technicians: Dental and Medical	n	n	n	n	n	n
Electrical and Electronic	n	n	n	n	n	n
Other Engineering & Physical Sciences	371	64	n	15	203	89
Clerical and Kindred Workers	*9,053*	*1,995*	*788*	*2,735*	*1,527*	*2,008*
Bookkeepers	820	172	95	198	169	186
Office Machine Operators	676	208	42	99	91	236
Secretaries, Typists, Stenographers	2,072	467	171	594	451	389
Craftsmen, Foremen, and Kindred Workers	*8,275*	*2,295*	*422*	*3,331*	*725*	*1,502*
Carpenters	79	27	u	u	12	27
Electricians	147	54	n	u	28	57
Machinists and Job Setters	234	75	18	u	54	78
Mechanics and Repairmen	1,107	388	88	115	174	342
Millwrights	100	64	n	n	21	15
Plumbers and Pipe Fitters	182	45	n	u	43	86
Stationary Engineers	365	217	15	u	47	82
Tinsmen, Coppersmiths, and Sheet Metal Workers	20	u	u	n	u	u
Toolmakers, and Die Makers and Setters	85	u	n	20	n	61
Compositors and Typesetters	1,308	u	11	1,215	u	66
Electrotypers and Stereotypers	60	n	n	59	n	u
Engravers, except Photoengravers	47	n	u	39	n	u
Opticians and Lensgrinders	n	n	n	n	n	n
Photoengravers and Lithographers	311	n	n	307	n	u
Pressmen and Plate Printers, Printing	808	u	u	763	u	38
Managers, Officials and Proprietors, except Farm	*3,770*	*1,155*	*372*	*737*	*743*	*763*
Saleworkers	*3,634*	*945*	*359*	*1,169*	*551*	*610*
Operatives and Kindred Workers	*19,257*	*6,917*	*4,972*	*1,879*	*1,456*	*4,033*
Service Workers	*922*	*408*	*100*	*186*	*108*	*120*
Laborers	*2,905*	*1,618*	*103*	*231*	*411*	*542*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 11 (Cont)

Occupation	Transport., Communic., & Utilities	Wholesale & Retail Trade	Finance, Insurance, Real Estate	Total Services	Medical & Other Health Serv.	Other Services	Educational Services	Government
TOTAL EMPLOYED	*46,201*	*88,174*	*24,282*	*83,765*	*17,515*	*48,928*	*17,322*	*21,911*
Professional, Technical, and Kindred Workers	*2,823*	*2,354*	*906*	*29,087*	*8,846*	*8,611*	*11,630*	*2,916*
Accountants and Auditors	665	707	466	1,085	19	1,045	21	558
Designers and Draftsmen	124	68	u	445	n	437	u	131
Surveyors	14	u	n	86	n	86	n	u
Dietitians and Nutritionists	n	u	u	159	119	u	31	u
Nurses, Professional	u	u	u	3,878	3,604	160	114	29
Photographers	u	11	u	280	15	256	u	22
Radio Operators	248	u	n	11	n	11	n	189
Technicians: Medical and Dental	u	u	n	1,136	1,123	n	13	17
Electrical and Electronic	70	u	n	u	n	u	n	73
Other Engineering & Physical Sciences	82	67	u	148	19	108	21	178
Clerical and Kindred Workers	*11,796*	*17,732*	*11,488*	*12,327*	*2,797*	*7,814*	*1,716*	*11,895*
Bookkeepers	540	2,390	1,431	921	115	720	86	283
Office Machine Operators	393	986	816	293	u	265	19	1,027
Secretaries, Typists, Stenographers	1,401	2,789	3,287	4,745	896	3,010	839	1,639
Craftsmen, Foremen, and Kindred Workers	*10,752*	*6,296*	*466*	*5,505*	*371*	*4,775*	*359*	*916*
Carpenters	85	156	53	84	16	55	13	26
Electricians	423	37	u	67	12	55	n	46
Machinists and Job Setters	505	43	u	46	n	42	u	17
Mechanics and Repairmen	3,434	2,800	158	3,389	169	3,025	195	508
Millwrights	13	16	n	u	n	u	n	n
Plumbers and Pipe Fitters	194	108	15	39	u	21	14	20
Stationary Engineers	301	173	30	254	77	145	32	37
Tinsmen, Coppersmiths, and Sheet Metal Workers	140	42	n	25	n	25	n	n
Toolmakers, and Die Makers and Setters	n	n	n	n	n	n	n	u
Compositors and Typesetters	u	27	17	38	u	23	13	14
Electrotypers and Stereotypers	u	n	n	u	n	u	n	n
Engravers, except Photoengravers	n	u	n	u	n	u	n	u
Opticians and Lensgrinders	n	125	23	n	n	n	n	u
Photoengravers and Lithographers	u	u	u	u	n	u	n	u
Pressmen and Plate Printers, Printing	u	u	u	u	n	u	n	14
Managers, Officials and Proprietors, except Farm	*2,685*	*15,095*	*4,067*	*4,520*	*312*	*3,704*	*504*	*1,753*
Salesworkers	*499*	*23,049*	*5,655*	*907*	*16*	*837*	*54*	*20*
Operatives and Kindred Workers	*12,157*	*9,937*	*107*	*5,881*	*413*	*5,309*	*159*	*408*
Service Workers	*1,252*	*10,801*	*1,440*	*24,406*	*4,716*	*16,841*	*2,849*	*3,319*
Laborers	*4,237*	*2,910*	*153*	*1,132*	*44*	*1,037*	*51*	*684*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 12
KANSAS CITY (SIX COUNTIES) PROJECTED DISTRIBUTION OF EMPLOYED PERSONS BY OCCUPATION AND INDUSTRY - 1975

Occupation	Total	Agriculture, Forestry, Fisheries	Mining	Contract Construction
Professional, Technical, and Kindred Workers	*85,426*	*198*	*60*	*2,563*
Accountants and Auditors	6,331	u	16	193
Designers and Draftsmen	3,132	u	u	254
Surveyors	282	n	u	93
Dietitians and Nutritionists	226	n	n	n
Nurses, Professional	6,716	n	u	u
Photographers	498	n	u	n
Radio Operators	908	u	u	18
Technicians: Medical and Dental	3,156	n	n	n
Electrical and Electronic, Other Engineering & Physical Sciences	3,562	n	n	51
Clerical and Kindred Workers	*122,005*	*77*	*87*	*2,658*
Bookkeepers	8,662	19	u	507
Office Machine Operators	10,636	11	13	151
Secretaries, Typists, Stenographers	28,765	30	43	942
Craftsmen, Foremen and Kindred Workers	*76,123*	*43*	*183*	*15,972*
Carpenters	4,501	u	14	3,716
Electricians	2,531	n	n	1,070
Machinists and Job Setters	3,052	n	n	17
Mechanics and Repairmen	23,256	17	30	1,511
Millwrights	633	n	n	96
Plumbers and Pipe Fitters	2,809	n	n	1,799
Stationary Engineers	1,952	n	16	34
Tinsmen, Coppersmiths, and Sheet Metal Workers	1,450	n	n	384
Toolmakers, and Die Makers and Setters	1,101	n	n	n
Compositors and Typesetters	1,365	n	u	u
Electrotypers and Stereotypers	40	n	n	n
Engravers, except Photoengravers	194	n	n	n
Opticians and Lensgrinders	290	n	n	n
Photoengravers and Lithographers	891	n	n	n
Pressmen and Plate Printers, Printing	1,271	n	n	n
Managers, Officials and Proprietors, except Farm	*51,664*	*2,160*	*78*	*4,988*
Saleaworkers	*43,616*	*57*	*32*	*217*
Operatives and Kindred Workers	*90,653*	*102*	*272*	*3,065*
Service Workers	*61,533*	*31*	*12*	*182*
Laborers	*20,019*	*1,173*	*n*	*4,318*
TOTAL EMPLOYED	*551,039*	*3,841*	*724*	*33,963*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 12 (Cont)

Occupation	Total Manufacturing	Total Durable Goods	Lumber & Wood Furniture	Metal Industries	Machinery, except Electrical	Transport. Equipment	Other Durable Goods
Professional, Technical, and Kindred Workers	*14,983*	*8,902*	*88*	*2,961*	*2,281*	*912*	*2,660*
Accountants and Auditors	1,466	808	21	216	258	112	201
Designers and Draftsmen	1,409	1,105	33	509	351	63	149
Surveyors	n	n	n	n	n	n	n
Dietitians and Nutritionists	u	u	n	n	u	n	u
Nurses, Professional	125	86	n	18	27	u	32
Photographers	210	46	n	u	15	u	18
Radio Operators	46	44	n	14	n	u	23
Technicians: Medical and Dental	n	n	n	n	n	n	44
Electrical and Electronic; Other Engineering & Physical Sciences	2,145	1,040	n	365	140	35	500
Clerical and Kindred Workers	*24,144*	*10,922*	*200*	*2,964*	*2,998*	*1,389*	*3,371*
Bookkeepers	1,479	557	15	66	165	66	245
Office Machine Operators	2,500	801	u	151	176	196	275
Secretaries, Typists, Stenographers	6,833	3,666	58	949	1,194	229	1,236
Craftsmen, Foremen and Kindred Workers	*27,294*	*16,966*	*339*	*5,757*	*4,002*	*2,597*	*4,271*
Carpenters	213	149	35	39	11	42	22
Electricians	784	597	n	217	91	142	147
Machinists and Job Setters	2,322	2,042	18	746	887	154	312
Mechanics and Repairmen	6,238	4,250	23	1,044	1,148	868	1,167
Millwrights	490	393	u	172	83	76	58
Plumbers and Pipe Fitters	592	339	n	93	76	129	41
Stationary Engineers	998	798	u	295	200	73	137
Tinsmen, Coppersmiths, and Sheet Metal Workers	760	737	n	371	109	96	161
Toolmakers, and Die Makers and Setters	1,098	937	19	322	436	78	82
Compositors and Typesetters	1,215	50	u	u	u	u	32
Electrotypers and Stereotypers	38	n	n	n	n	n	n
Engravers, except Photoengravers	131	66	n	u	13	u	45
Opticians and Lensgrinders	105	105	n	u	n	n	104
Photoengravers and Lithographers	867	39	n	15	11	u	u
Pressmen and Plate Printers, Printing	1,188	50	n	12	u	u	23
Managers, Officials and Proprietors, except Farm	*10,190*	*4,973*	*110*	*1,072*	*1,765*	*465*	*1,561*
Saleswerkers	*7,947*	*2,690*	*123*	*512*	*724*	*153*	*1,178*
Operatives and Kindred Workers	*50,715*	*29,988*	*480*	*7,877*	*5,106*	*6,864*	*9,661*
Service Workers	*2,042*	*1,109*	*18*	*314*	*109*	*240*	*428*
Laborers	*4,793*	*2,224*	*65*	*750*	*334*	*233*	*842*
TOTAL EMPLOYED	*142,108*	*77,774*	*1,423*	*22,207*	*17,319*	*12,853*	*23,972*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 12 (Cont)

Occupation	Total Non-Durable Goods	Food & Kindred Products	Textile & Apparel	Printing & Publishing	Chemicals & Allied	Other Non-Durable Goods
Professional, Technical, and Kindred Workers	*8,081*	*535*	*227*	*1,705*	*2,487*	*1,127*
Accountants and Auditors	658	114	18	86	227	213
Designers and Draftsmen	304	u	76	123	69	28
Surveyors	n	n	n	n	n	n
Dietitians and Nutritionists	u	n	n	n	u	n
Nurses, Professional	30	u	u	u	16	10
Photographers	164	n	n	151	11	u
Radio Operators	n	u	n	n	n	u
Technicians: Medical and Dental	n	n	n	n	n	n
Electrical and Electronic	1,106	66	n	71	780	188
Other Engineering & Physical Sciences						
Clerical and Kindred Workers	*13,222*	*1,538*	*810*	*3,838*	*4,642*	*2,394*
Bookkeepers	922	104	68	160	424	166
Office Machine Operators	1,699	268	75	231	606	519
Secretaries, Typists, Stenographers	3,167	335	166	841	1,371	454
Craftsmen, Foreman and Kindred Workers	*10,328*	*1,615*	*485*	*4,015*	*2,204*	*2,009*
Carpenters	64	18	u	u	15	21
Electricians	187	41	n	u	74	67
Machinists and Job Setters	280	51	32	u	114	76
Mechanics and Repairmen	1,988	374	123	203	704	584
Millwrights	97	32	n	n	48	17
Plumbers and Pipe Fitters	253	37	n	u	120	90
Stationary Engineers	200	127	12	u	81	64
Tinsmen, Coppersmiths, and Sheet Metal Workers	23	u	u	n	11	u
Toolmakers, and Die Makers and Setters	161	u	u	28	n	129
Compositors and Typesetters	1,165	u	u	1,059	13	78
Electrotypers and Stereotypers	36	n	u	35	n	n
Engravers, except Photoengravers	66	n	u	55	n	u
Opticians and Lensgrinders	n	n	n	n	n	u
Photoengravers and Lithographers	828	n	u	822	n	67
Pressman and Plate Printers, Printing	1,139	u	u	1,060	u	
Managers, Officials and Proprietors, except Farm	*5,217*	*776*	*318*	*1,052*	*2,259*	*812*
Salesworkers	*5,257*	*666*	*387*	*1,724*	*1,675*	*805*
Operatives and Kindred Workers	*20,727*	*5,004*	*4,213*	*2,989*	*4,426*	*4,095*
Service Workers	*933*	*239*	*83*	*191*	*328*	*92*
Laborers	*2,569*	*644*	*82*	*251*	*1,249*	*343*
TOTAL EMPLOYED	*64,334*	*11,017*	*6,605*	*15,765*	*19,270*	*11,677*

NOTES: u: Under 10
n: Zero or very negligible

TABLE 12 (Cont)

Occupation	Transport. Communic. & Utilities	Wholesale & Retail Trade	Finance, Insurance, Real Estate	Services	Government
Professional, Technical, and Kindred Workers	*4,012*	*6,608*	*1,222*	*49,370*	*6,410*
Accountants and Auditors	646	691	428	1,920	965
Designers and Draftsmen	167	111	u	954	222
Surveyors	19	u	n	137	21
Dietitians and Nutritionists	n	u	u	210	u
Nurses, Professional	u	16	u	6,501	52
Photographers	12	14	u	235	25
Radio Operators	330	u	n	40	459
Technicians: Medical and Dental	u	u	n	3,110	33
Electrical and Electronic; Other Engineering & Physical Sciences	257	181	n	352	566
Clerical and Kindred Workers	*12,675*	*23,951*	*14,700*	*25,486*	*18,227*
Bookkeepers	577	2,506	1,837	1,418	312
Office Machine Operators	773	1,987	1,899	1,000	2,302
Secretaries, Typists, Stenographers	1,665	3,079	3,829	9,541	2,803
Craftsmen, Foremen and Kindred Workers	*12,679*	*9,105*	*623*	*8,618*	*1,606*
Carpenters	71	221	80	153	25
Electricians	470	36	u	103	64
Machinists and Job Setters	521	40	u	58	15
Mechanics and Repairmen	4,675	4,175	203	5,400	1,807
Millwrights	17	13	n	17	n
Plumbers and Pipe Fitters	210	111	11	53	33
Stationary Engineers	283	201	24	343	53
Tinsmen, Coppersmiths, and Sheet Metal Workers	193	43	n	60	n
Toolmakers, and Die Makers and Setters	n	n	n	n	u
Compositors and Typesetters	u	48	16	46	31
Electrotypers and Stereotypers	n	n	n	n	n
Engravers, except Photoengravers	n	11	n	u	u
Opticians and Lensgrinders	n	163	21	n	u
Photoengravers and Lithographers	u	u	u	u	11
Pressmen and Plate Printers, Printing	u	u	u	38	34
Managers, Officials and Proprietors, except Farm	*2,939*	*15,207*	*6,042*	*6,837*	*3,223*
Saleswerkers	*713*	*26,366*	*6,832*	*1,421*	*31*
Operatives and Kindred Workers	*15,536*	*12,670*	*110*	*7,643*	*540*
Service Workers	*1,159*	*13,694*	*1,013*	*37,117*	*6,283*
Laborers	*4,009*	*2,969*	*173*	*1,795*	*789*
TOTAL EMPLOYED	*53,722*	*110,570*	*30,715*	*138,287*	*37,109*

NOTES: u: Under 10
n: Zero or very negligible

used in the economic analysis presented earlier in this report. While the manpower research is based by necessity on employment information defined in U. S. Census of Population equivalent terms, the economic analysis presented earlier is based on U. S. Bureau of Labor Statistics (BLS) wages and salary employment terms. Occupation-by-industry and other occupation-related information for metropolitan areas at the level of detail desired in our study is available only from the U. S. Census of Population. Since developing detailed occupation-by-industry and occupation-by-age-and-sex matrices for a benchmark year, such as 1960, is essential in our general analytical framework, we have had to adopt the definitions used in the 1960 U. S. Census of Population. This means that we have had to translate the projected 1975 employment levels in each industry sector, defined in BLS employment terms, into U. S. Census of Population equivalent terms. This explains why the projected 1975 employment levels presented in the economic analysis part of our study differ from the sectoral employment levels for the same year shown in Table 4.

The differences between the BLS and the Census of Population employment data stem from two major sources. First, they differ in the treatment of business units considered parts of an establishment, such as central administrative offices and auxiliary units, in the industrial classification of establishments, and in their use of different reporting patterns by multiunit companies. For example, the Population Census system classifies all of ordnance and accessories (SIC 19), with the exception of SIC 194, with "fabricated metal products" (SIC 34). In addition, the Census "government" sector includes employment only in "public administration", that is, only in uniquely governmental functions, such as legislative and judicial activities and most of the activities in the executive agencies. Government agencies engaged in educational and medical services and in activities commonly carried on also by private enterprises are classified in the appropriate industrial category (in our own work, we have classified public education employment as part of the government sector). In contrast to this Census practice, the BLS system classifies employment in all government agencies in a single major group.

The second major difference is due to the fact that the BLS wages and salary payroll employment statistics, collected on an establishment or place of work basis, exclude the self-employed and unpaid family workers, while they are included in the Census system. These differences in coverage are not significant at the level of total metropolitan area employment in all industries, but they are important at the level of some individual industry sectors, such as the services sector.

In short, in our manpower research we have adopted the Census measurement of employment in order to make maximum use of detailed occupation-related data available from Census sources. In the economic analysis that we have presented earlier, however, we have used BLS employment series in order to make maximum use of the continuous, up-to-date, and comprehensive set of data available in this manner.

4. Analysis of Average Annual Expansion Needs by Major Industry Sectors

Table 13 shows the distribution of average annual expansion needs of the Kansas City Metropolitan Area economy for new manpower by occupation and major

TABLE 13
AVERAGE ANNUAL EXPANSION REQUIREMENTS OF THE KANSAS CITY METROPOLITAN AREA ECONOMY FOR NEW MANPOWER, BY OCCUPATION AND INDUSTRY SECTOR, 1960-1975

	Total	Agr., Forestry & Fisheries	Mining	Constr.	Mfg.	Transp., Communic. Utilities	Wholesale & Retail Trade	Finance, Insurance, Real Estate	Services	Government
Professional, Technical, & Kindred Workers	*2,514*	*u*	*u*	*79*	*467*	*79*	*284*	*21*	*1,353*	*233*
Accountants and Auditors	107	n	n	u	24	(u)	(u)	(u)	55	27
Designers and Draftsmen	89	n	n	u	36	u	u	u	34	u
Surveyors	u	n	n	u	n	n	n	n	u	u
Dietitians and Nutritionists	u	n	n	n	n	n	n	n	175	u
Nurses, Professional	182	n	n	n	u	n	n	n	(u)	n
Photographers	u	n	n	n	u	n	n	n	u	18
Radio Operators	28	n	n	n	u	u	n	n	132	u
Technicians: Medical and Dental	132	n	n	n	(u)	n	n	n	13	21
Electrical and Electronic; Other Engineering & Physical Sciences	136	n	n	u	87	u	u	n		
Clerical and Kindred Workers	*2,576*	*(u)*	*n*	*81*	*512*	*59*	*415*	*214*	*878*	*422*
Bookkeepers	94	(u)	n	11	11	u	u	27	33	u
Office Machine Operators	407	u	n	u	102	25	67	72	47	85
Secretaries, Typists, Stenographers	660	(u)	n	20	170	18	19	36	320	78
Craftsmen, Foremen and Kindred Workers	*1,349*	*(u)*	*(u)*	*303*	*468*	*129*	*187*	*10*	*208*	*46*
Carpenters	30	n	(n)	24	(u)	n	u	u	u	n
Electricians	41	n	n	22	13	u	n	n	u	u
Machinists and Job Setters	42	n	n	n	35	u	n	n	u	n
Mechanics and Repairmen	583	n	n	60	179	83	92	u	134	73
Millwrights	10	n	n	u	u	n	n	n	n	n
Plumbers and Pipe Fitters	53	n	n	39	11	u	n	n	u	u
Stationary Engineers	18	n	n	n	10	(u)	u	n	u	u
Tinsmen, Coppersmiths, & Sheet Metal Workers	26	n	n	u	12	u	n	n	n	n
Toolmakers, and Die Makers and Setters	23	n	n	n	23	n	n	n	n	n
Compositors and Typesetters	(u)	n	n	n	(u)	n	u	n	n	u
Electrotypers and Stereotypers	(u)	n	n	n	(u)	n	n	n	n	n
Engravers, except Photoengravers	u	n	n	n	u	n	n	n	n	n
Opticians and Lensgrinders	u	n	n	n	n	n	u	n	n	n
Photoengravers and Lithographers	36	n	n	n	35	n	n	n	n	n
Pressmen and Plate Printers, Printing	27	n	n	n	24	n	n	n	u	u
Managers, Officials, and Proprietors, except Farm	*631*	*(134)*	*(u)*	*138*	*219*	*17*	*u*	*132*	*155*	*98*
Salesworkers	*513*	*(u)*	*n*	*u*	*159*	*14*	*221*	*79*	*34*	*u*
Operatives and Kindred Workers	*1,336*	*(u)*	*(u)*	*102*	*710*	*225*	*182*	*u*	*118*	*u*
Service Workers	*1,209*	*(u)*	*n*	*u*	*u*	*(u)*	*193*	*28*	*848*	*198*
Laborers	*(71)*	*118*	*n*	*48*	*42*	*15*	*u*	*u*	*44*	*u*
Total Employed	*10,089*	*270*	*u*	*762*	*2,498*	*502*	*1,494*	*429*	*3,637*	*1,014*

NOTES: u: under 10; (u) if negative
n: zero or very negligible; (n) if negative

SOURCE: Tables 3 and 4.

industry sector. Such a table is instructive in the sense that it provides a perspective within which we can pinpoint, even in a relatively aggregated way, the directions of expansion-related growth in demand for new manpower by different economic sectors. Such a table tells us in which sectors the expansion-demand for new manpower in any given occupational category is concentrated. Thus, we can see readily that more than half of the expansion-demand for professional, technical, and kindred workers is generated by the services sector. We note, further, that this is almost three times the demand generated by the manufacturing sector alone and significantly more than twice the demand generated by the government and wholesale and retail trade sectors combined. A more detailed analysis at a different scale indicates that the manufacturing sector requires almost as many secretaries, typists, and stenographers a year on the average as mechanics and repairmen, due solely to the expansion of the metropolitan area economy. Many other inferences can be made through an analysis of such a table. Therefore, rather than presenting here an exhaustive review of what the table contains, we will let the table speak for itself.

One point that should be noted in a table of this kind is that as more and more detail is introduced either in terms of specific occupational categories or in terms of industrial classification, the individual entries in the table tend to get smaller and smaller in magnitude. This fact can readily be observed in Table-5. Thus, although it is highly instructive to have more detailed tables of this type, its usefulness for practical purposes will be limited by the large number of very small entries it is likely to contain. In addition, the individual entries in such a greatly detailed table will be less and less defensible in terms of their accuracy.

For purposes of vocational educational planning, greater detail in terms of specific occupational categories or occupational clusters is generally more valuable than greater detail in terms of industrial sectors. However, greater occupational detail is difficult to achieve, except through an exhaustive survey. This, in itself, is empirically hazardous as we have noted above with respect to area labor skill survey. In our own approach, therefore, we have extended our manpower requirements analysis through intensive interviews within the community, in order to achieve the added dimension of detail and concreteness that is required in vocational educational planning.

APPENDIX - TECHNICAL DESCRIPTION OF THE MANPOWER REQUIREMENTS ANALYSIS

Introduction

We present in this appendix a detailed description of the data sources and methods used in accomplishing the four major research tasks that together comprise our manpower requirements analysis. As noted earlier, these four research tasks consist of the following: (a) development of the 1960 occupation-by-industry employment matrix, (b) development of the 1975 occupation-by-industry employment matrix, (c) determination of average annual replacement needs, and (d) determination of average annual expansion needs. Our discussion below follows the sequence in which these four research tasks are identified here.

Development of the 1960 Occupation-by-Industry Employment Matrix

The most exhaustive information on the occupational characteristics of employment in metropolitan areas is available from the U. S. Census of Population in 1960. Since detailed occupational employment data are not available for post-census years, particularly on the occupational structure of employment in individual industry sectors, we have used the 1960 Census information in constructing a detailed base year (1960) occupation-by-industry employment matrix or table as a starting point in our manpower analysis. Two major steps were involved in constructing such a matrix. First, the matrix had to be developed for the four-county Kansas City SMSA (Standard Metropolitan Statistical Area), consisting of Johnson and Wyandotte Counties in Kansas and Clay and Jackson Counties in Missouri, since occupation-by-industry data were not available for the two remaining counties (Cass and Platte Counties in Missouri) which were made a part of the Kansas City SMSA in 1962. Second, the four-county matrix had to be adjusted for the two remaining counties in order to develop such an occupation-by-industry employment matrix for the six-county SMSA as a whole.

Preliminary to these two steps, the occupational groups and specific occupational categories to be included in our analysis were selected. These consist of the eight standard occupational groups and twenty-seven specific occupational categories that fall within three occupational groups (i.e., professional-technical-kindred workers, clerical and office workers, and craftsmen-foremen and kindred workers). The selection of the twenty-seven specific occupational categories was guided by the availability of adequately detailed information and by a consideration of their relevance for vocational educational planning in a community college system.

Following the selection of the occupational groups and specific occupational categories, the industrial sectors for which employment data were available from the 1960 Census were aggregated to match the industrial groupings used in the economic analysis and employment projections part of our study, so that the sectoral employment projections

already made to 1975 could be used in developing a 1975 occupation-by-industry employment matrix paralleling the 1960 matrix. A list of the industrial categories used in our manpower analysis is presented in Table 14.

Step 1: Development of the Four-County Occupation-by-Industry Matrix

The total number of persons employed in each occupation and industry sector was determined by adding up the separately given occupation-by-industry distribution of employed males and females available from U. S. Bureau of the Census, *U. S. Census of Population: 1960, Detailed Characteristics, Missouri,* Final Report PC(1)-27D (Washington, D. C.: U. S. Government Printing Office, 1962), Table 125. These occupation-by-industry employment distribution data were available for all the eight major occupational groups and most of the specific occupational categories. In certain occupations, however, the industrial distribution of employment was given in Table 125 for either males or females but not for both. This situation usually came up where the industrial distribution of employment in a given occupation was given for males, for example, while for females no data were provided on the same occupation even if there clearly seemed to be female employment in that occupation in the four-county area. In such cases, we first determined from Table 121 in the same source the number of males or females employed in the particular occupational categories where this problem arose and distributed each control total thus obtained over the industrial categories by prorating it in each case on the basis of the distribution of males or females given in Table 125. In the case of occupational categories for which neither male nor female distribution over industrial categories was available, we distributed the employment control totals obtained from Table 121 over the industrial categories on the basis of percent distribution observed nationally and considered as valid locally. The national data on the distribution over industries of employment in specific occupational categories were obtained from Appendix H of an unpublished study recently made by the U. S. Department of Commerce, Bureau of Labor Statistics, entitled Tomorrow's Manpower Needs. Finally, the residual categories of "occupation not reported" and "industry not reported" were prorated over the occupations and industries, respectively.

Step 2: Adjustment of the Four-County Occupation-by-Industry Matrix for the Remaining Two Counties

Total employment in each industry sector for Cass and Platte Counties, Missouri, was obtained from U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Social and Economic Characteristics, Missouri,* Final Report PC(1)-27C (Washington, D. C.: U. S. Government Printing Office, 1962), Table 85. No data were available on the occupational composition of employment for these two counties at the level of detail desired in our analysis. By assuming that the occupational composition of each industry sector in these two remaining counties approximated that of the four-county area, we prorated each two-county sectoral employment total over the occupational categories on the basis of the four-county occupation-by-industry employment matrix developed earlier. The six-county Kansas City SMSA occupation-by-industry employment matrix was thus obtained by adding up the separately derived four-county and two-county matrices.

TABLE 14
CLASSIFICATION OF INDUSTRIAL SECTORS USED IN MANPOWER ANALYSIS

Standard Industrial Classification (SIC)	*Industry Description*
01-09 (exc. 0713)	Agriculture, Forestry, and Fisheries
10-14	Mining
15-17	Contract Construction
19-39	Manufacturing
(19, 24-25, 32-39)	Durable Goods
24-25	Lumber and furniture
33-34, 19 (exc. 194)	Primary and fabricated metal products
35	Machinery, except electrical
37	Transportation equipment
(194, 32, 36, 38-39)	Other Durable Goods[a]
194, 38	Instruments
39	Miscellaneous manufacturing industries
32	Stone, clay, glass and concrete products
36	Machinery, electrical
(0713, 20-23, 26-31)	Nondurable Goods
20, 0713	Food and kindred products
22-23	Textiles, apparel, and related products
27	Printing and publishing
28	Chemicals and allied products
(21, 26, 29-31)	Other Nondurable Goods[a]
21	Tobacco
30	Rubber and misc. plastics products
31	Leather and leather products
26	Paper and allied products
29	Petroleum refining and related industries
40-49	Transportation, Communication, Electric, Gas, and Sanitary Services
50-59	Wholesale and Retail Trade
60-67	Finance, Insurance, and Real Estate
70-86	Services
90-94	Government

NOTES: [a]The entire group of industries included in this category is treated as one sector.

Source: U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Social and Economic Characteristics, Missouri,* Final Report PC(1)-27C (Washington, D.C.: U. S. Government Printing Office, 1962), p. XXII.

Development of the 1975 Occupation-by-Industry Employment Matrix

The development of an occupation-by-industry employment matrix for 1975 having the same occupational detail and more or less the same industrial detail as the 1960 matrix comprised the second research task in our manpower analysis. Again, two major steps were involved in performing this task. First, we had to develop projections of employment in 1975 for each industrial sector as defined in Table 14, that is, consistent with the Census system definition of industrial categories and employment coverage. Secondly, we had to develop a consistent and reasonable 1975 occupation-by-industry employment matrix by using the sectoral employment control totals projected to 1975, by studying national trends and projections to 1975 in the detailed occupational structure of individual industries, and by relating these national trends to expected changes within the Kansas City Metropolitan Area economy.

As noted in some detail in the manpower analysis part of our report, the U. S. Bureau of Labor Statistics (BLS) wages and salary payroll employment data differ definitionally from employment data given in the Census system. These differences derive from the application of different methods in classifying economic activities into specific industrial sectors and in employing different employment coverage practices. Thus in order to develop 1975 sectoral employment projections consistent with the definitions used in the Census system, we had to adjust the BLS-defined employment projections by using a set of conversion ratios derived from a comparison of Census and BLS employment figures for each sector in 1960.

Subsequently, specific occupation-by-industry growth rates (1975/1960) were developed from unpublished national projections available from U. S. Department of Commerce, Bureau of Labor Statistics, Tommorow's Manpower Needs, and these growth rates were applied to the 1960 Kansas City SMSA occupation-by-industry employment matrix in order to approximate a 1975 Kansas City SMSA matrix that would result *if* national trends and projections on the occupational structure of industries would in fact prevail locally. This analysis revealed that when employment in each major occupational group thus projected were summed, the employment total for the individual industrial sectors differed, in some cases significantly, from the already projected Kansas City SMSA sectoral employment levels in 1975 consistent with the Census system definitions. At this point, we analyzed the structural differences between the local and the national industrial sectors, as well as the projected differences in the growth pattern of individual industries. As a result of this analysis, we adjusted the preliminary 1975 occupation-by-industry employment matrix based on national growth rates in order to develop a matrix that would be consistent with the sectoral employment control totals and would reflect local shifts in the occupational composition of different industries in a reasonably well manner.

Determination of Average Annual Replacement Needs

Job vacancies that can be expected to occur during a given year result not only from rising economic activity but also from what we might call "replacement needs"

stemming from the separation of individuals from the labor force because of death, retirement, marriage, child birth, disability, migration, and other reasons. In order to make a rough estimate of average annual replacement needs of a metropolitan area, it is necessary to develop an occupation-by-age and sex matrix of employment in a given metropolitan area for a base. For many reasons, the year for which such tables can be developed with some confidence in the last Census of Population year (i.e., 1960). This provides a data base that is recent enough to make estimates of average annual replacement requirements with enough confidence.

Once the base year (1960) occupation-by-age and sex tables were developed, we applied age-specific average annual separation rates in order to obtain the number of persons by sex in each age and occupation who would be expected to leave the labor force for a variety of reasons every year. Summing two such tables developed for males and females over all ages then provided total estimates of average annual replacement needs by each occupational category. The age-specific average annual separation rates by sex used in this analysis were obtained from Tables 103 and 105 of *Tomorrow's Manpower Needs* mentioned earlier.

Determination of Average Annual Expansion Needs

Average annual expansion needs for new manpower, or to put it differently, the number of new jobs becoming available in a given year due to economic growth, was obtained by first finding the difference between the projected number of persons employed in 1975 in each occupational category and the same figures in 1960, and then by annualizing this difference.

Expansion requirements by occupation and industry sector were determined by subtracting the 1960 matrix from the 1975 matrix and then by annualizing each of these differences.

This method was used in our analysis, since consistent historical data do not exist on the detailed occupational characteristics of employment. Apart from the fact that adequately detailed occupational employment data do not exist on a continuous basis or for any post-census year, the available employment data such as that provided by the U.S. Bureau of Labor Statistics suffer from various deficiencies in coverage. In the case of BLS, for example, self-employed persons and unpaid family workers are not included in the employment count. In addition, consistent employment information for the agricultural sector is difficult to obtain from the BLS or other sources, due to differences in coverage, definitional differences, or differences in the sampling methods used in developing the even partially available information.

III. THE DYNAMICS OF POPULATION GROWTH IN THE KANSAS CITY METROPOLITAN AREA

1. Introduction

We present in this chapter a study of the dynamics of population growth in the Kansas City Metropolitan Area. Primary emphasis in our study is placed on an analytical interpretation of population growth patterns in the metropolitan area, as opposed to a purely descriptive survey of population growth trends and prospects. Thus, we have attempted to pinpoint in our analysis the major forces and processes that have shaped population growth in the metropolitan area. In many ways, our study is a sequel to previous demographic studies conducted by local agencies, such as the City Planning Department of Kansas City, Missouri. It is also concurrent to a projective study being undertaken by the Metropolitan Planning Commission - Kansas City Region. While this study is largely focused on a detailed description of population projections for each county, our study attempts to portray a clear understanding of the dynamics of population change in the area, past and future.

First, we present a discussion of population growth trends in the metropolitan region. Next, this discussion is extended into an analysis of differential population growth patterns within the metropolitan area. This then is followed by a study of the mobility patterns of the metropolitan area population. Subsequently, we present an analysis of nonwhite population growth in the area. The discussion then shifts into a study of the educational attainment characteristics of the area's population. Lastly, we present an interpretation of population projections that already have been made for the metropolitan area up to 1990.

2. Recent Population Growth Trends in the Kansas City Metropolitan Area:

During the twenty-seven year period between 1940 and 1967, the population of the six-county Kansas City Metropolitan Area increased by 78.5 percent, or by 565,147 persons (from 720,039 to 1,285,186). Of this population growth, 22.8 percent occurred between 1940 and 1950, 43.1 percent between 1950 and 1960, and 34.1 percent between 1960 and 1967. While the total SMSA population increased by 17.9 percent between 1940 and 1950, it increased by 28.7 percent during the next decade (1950-1960) and by 13.3 percent between 1960 and 1966 (17.6 percent between 1960 and 1967). Thus, the rate of growth in the 1960's has been somewhat slower than during the 1950-1960 decade and quite comparable to the growth rate experienced during the 1940-1950 decade (refer to Table 16).

Recent population growth rates in the Kansas City SMSA can be seen from a broader perspective in Table 17. Both during the 1950-1960 decade and during the more recent period of 1960-1966, the growth rates experienced by the Kansas City SMSA have been substantially higher than the national and Missouri growth rates, and they have been

TABLE 15
POPULATION OF MAJOR URBAN AND NONURBAN PLACES IN THE JUNIOR COLLEGE DISTRICT OF METROPOLITAN KANSAS CITY, MISSOURI

Place, by County	YEAR 1940	1950	1960
CASS COUNTY:			
Belton	971	1,951	4,897
CLAY COUNTY:			
Avondale	435	532	663
Birmingham	160	236	201
Claycomo	n.a.	808	1,423
Gladstone	n.a.	n.a.	14,502
Kansas City[a]	n.a.	13,797	19,168
North Kansas City	2,688	3,886	5,657
Oaks	n.a.	n.a.	159
Oakview	n.a.	n.a.	543
Oakwood	n.a.	n.a.	159
Oakwood Manor	n.a.	n.a.	178
Oakwood Park	n.a.	n.a.	132
Pleasant Valley	n.a.	n.a.	1,109
JACKSON COUNTY:			
Grandview	596	1,556	6,027
Greenwood	n.a.	n.a.	488
Independence[b]	n.a.	n.a.	33,576
Kansas City[c]	399,178	442,825	440,371
Lake Lotawanna	n.a.	n.a.	1,499
Lee's Summit	2,263	2,554	8,267
Raytown	n.a.	n.a.	17,083
Sugar Creek	1,638	1,858	2,662
Unity Village	n.a.	n.a.	153
TOTAL (All Places):	n.a.	n.a.	558,917

NOTES: n.a.: Not Available, in many cases very small or close to zero.

[a]Part in Clay County only.

[b]Part of Independence, consisting roughly of Census Tracts 110, 118-121, and 124, is included in the Junior College District of Metropolitan Kansas City, Missouri.

[c]Part in Jackson County only.

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, Number of Inhabitants, Missouri,* Final Report PC(1)-27A (Washington, D.C.: U. S. Government Printing Office, 1961).

TABLE 16
POPULATION GROWTH IN THE KANSAS CITY METROPOLITAN AREA, 1940-1967

SMSA AND COUNTY	1940 (Apr. 1 Census)	1950 (Apr. 1 Census)	1960 (Apr. 1 Census)	YEARS (JULY 1)						
				1961	1962	1963	1964	1965	1966	1967
Kansas City SMSA Total	720,039	848,655	1,092,545	1,120,000	1,121,000	1,144,000	1,161,000	1,183,000	1,238,000	1,285,186
Clay, Missouri	30,417	45,221	87,474	91,000	90,000	94,000	96,000	100,000	110,000	114,240
Jackson, Missouri	477,828	541,035	622,732	630,000	620,000	629,000	633,000	640,000	674,000	696,626
Cass, Missouri	19,534	19,325	29,702	35,000	38,000	37,000	37,000	39,000	38,000	39,780
Platte, Missouri	13,862	14,973	23,350	25,000	25,000	26,000	26,000	28,000	29,000	31,110
Johnson, Kansas	33,327	62,783	143,792	154,000	161,000	170,000	181,000	189,000	190,000	201,960
Wyandotte, Kansas	145,071	165,318	185,495	186,000	187,000	188,000	187,000	187,000	197,000	202,470

SOURCES: 1940: (1) U. S. Bureau of the Census, *U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part 16, Kansas* (Washington, D. C.: U. S. Government Printing Office, 1952), Table 8.

(2) ——, *U. S. Census of Population: 1960, Number of Inhabitants, Missouri*, Final Report PC(1)-27A (Washington, D. C.: U. S. Government Printing Office, 1961), Table 7.

1950 and 1960: U. S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 7, "Components of Population Change, 1950 to 1960, For Counties, Standard Metropolitan Statistical Areas, State Economic Areas, and Economic Subregions" (November, 1962), pp. 27-28, 36-37.

1961-1964: *Ibid.*, Series P-25, No. 330, "Estimates of the Population of the Largest Standard Metropolitan Statistical Areas: 1960 to 1964" (March 21, 1966), p. 15.

1965: *Ibid.*, Series P-25, No. 371, "Estimates of the Population of Standard Metropolitan Statistical Areas: July 1, 1965" (August 14, 1967), p. 22.

1966: The Chamber of Commerce of Greater Kansas City, Research Department, *Economic Fact Book, Greater Kansas City, 1968*, p. B-4.

1967: City Planning Department, Kansas City, Missouri, "Population Estimates - July 1, 1967 and Land Area in Square Miles" (July 1, 1967), Mimeographed, 3 pp.

TABLE 17
COMPARISON OF SELECTED POPULATION GROWTH RATES, 1950-1960 AND 1960-1966

Place	– Percent Growth – 1950-1960[a]	1960-1966[b]
United States[c]	18.5	9.2
Missouri[d]	9.2	5.6
Kansas City SMSA[e]	*28.7*	*13.3*
St. Louis SMSA	19.8	8.5
Denver SMSA	51.8	16.5
Dallas SMSA	45.7	20.8
Atlanta SMSA	39.9	23.7
Minneapolis-St. Paul SMSA	28.8	9.9

NOTES:

[a]April 1, 1950 – April 1, 1960

[b]April 1, 1960 – July 1, 1966

[c]Total resident population (excluding Armed Forces abroad), including Alaska and Hawaii.

[d]Total resident population (including persons in the Armed Forces stationed there).

[e]Standard Metropolitan Statistical Area, consisting of Clay, Jackson, Platte, and Cass Counties in Missouri and Johnson and Wyandotte Counties in Kansas.

SOURCES:

United States: U. S. Bureau of the Census, *Current Population Reports,* Series P-25, No. 383, "Estimates of the Population of the United States January 1, 1950, to December 1, 1967" (January 15, 1968).

Missouri:

(1) U. S. Bureau of the Census, *Current Population Reports,* Series P-23, No. 7, "Components of Population Change, 1950 to 1960, for Counties, Standard Metropolitan Statistical Area, State Economic Areas, and Economic Sub-regions" (November, 1962), p. 36

(2) *Ibid.,* Series P-25, No. 380, "Estimates of the Population of States: July 1, 1966, with Provisional Estimates for July 1, 1967" (November 24, 1967), p. 10.

Metropolitan Areas

(1) Source 1 listed for Missouri above.

(2) U. S. Bureau of the Census, *Current Population Reports,* Series P-25, No. 378, "Provisional Estimates of the Population of the Largest Metropolitan Areas: July 1, 1966" (November 6, 1967), p. 6.

relatively favorable when compared with the growth rates experienced by other metropolitan areas. Comparisons with Missouri as a whole and with St. Louis are especially revealing. First, St. Louis (SMSA) grew at a much faster rate than did Missouri as a whole during either of the two periods compared. Secondly, Kansas City (SMSA) grew at a much faster rate than did St. Louis, but the difference between the growth rates of these two metropolitan areas has been narrowed more recently.

It is important to view the steady growth of the Kansas City SMSA within the context of growth rates experienced in Missouri as a whole. It should not escape one's attention that the Kansas City SMSA grew three times as fast as Missouri during the 1950-1960 decade and over twice as fast during the first six years after 1960. The Missouri part of the Kansas City SMSA, consisting of Clay, Jackson, Platte, and Cass Counties, grew more than twice as fast as Missouri as a whole during either of these two periods (22.8% and 11.8%, respectively).

While Missouri as a whole lost about 158,000 persons through net migration during the 1950 - 1960 decade*, Kansas City SMSA gained 89,191 persons as shown in Table 18. Although a substantial portion of this net population inflow was absorbed by Johnson County, Kansas, the four-county area in Missouri showed a surplus during this ten-year period, rather than a deficit, in terms of net migration.

An analysis of the components of population change in the Kansas City SMSA, shown in Table 18, indicates, first, that during the 1950 - 1960 decade, 36.6 percent of the total growth was due to a gain through net migration (in-migration minus out-migration), while 63.4 percent of the growth was due to natural increase, that is, births minus deaths. During the first half of this decade, however, net migration accounted for only about 10 percent of the total population growth in the metropolitan area. This clearly indicates that the new inflow of persons into the metropolitan area from outside has recently slowed down considerably in comparison with the trends experienced during the previous decade (1950 - 1960). Secondly, it seems clear that Jackson and Wyandotte Counties, the two "central city" counties of the Kansas City SMSA, have experienced a much more accelerated "exodus" of their population to the suburbs during the first half of this decade than during the previous decade. This seems to indicate, in combination with the earlier observation on net migration trends, that much of the population growth in the "suburban counties" (Johnson, Clay, Platte, and Cass) during recent years simply reflect outward population shifts from the central city counties.

This analysis leads us to the conclusion that much of the population growth in the Kansas City SMSA during the last two decades has been due to natural increase and only in part due to net migration which in recent years has slowed down considerably. The effect of natural increase on the age composition of the metropolitan area population can be seen in Figure 3. In the first place, the number of persons under 20 years of age in the metropolitan area increased by 68.5 percent and the number of children ten years or younger increased 69.4 percent during the 1950 - 1960 decade. In all age groups, except

*U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 247, "Estimates of the Components of Population Change by Color, for States: 1950 - 1960 (April 2, 1962), p. 5.

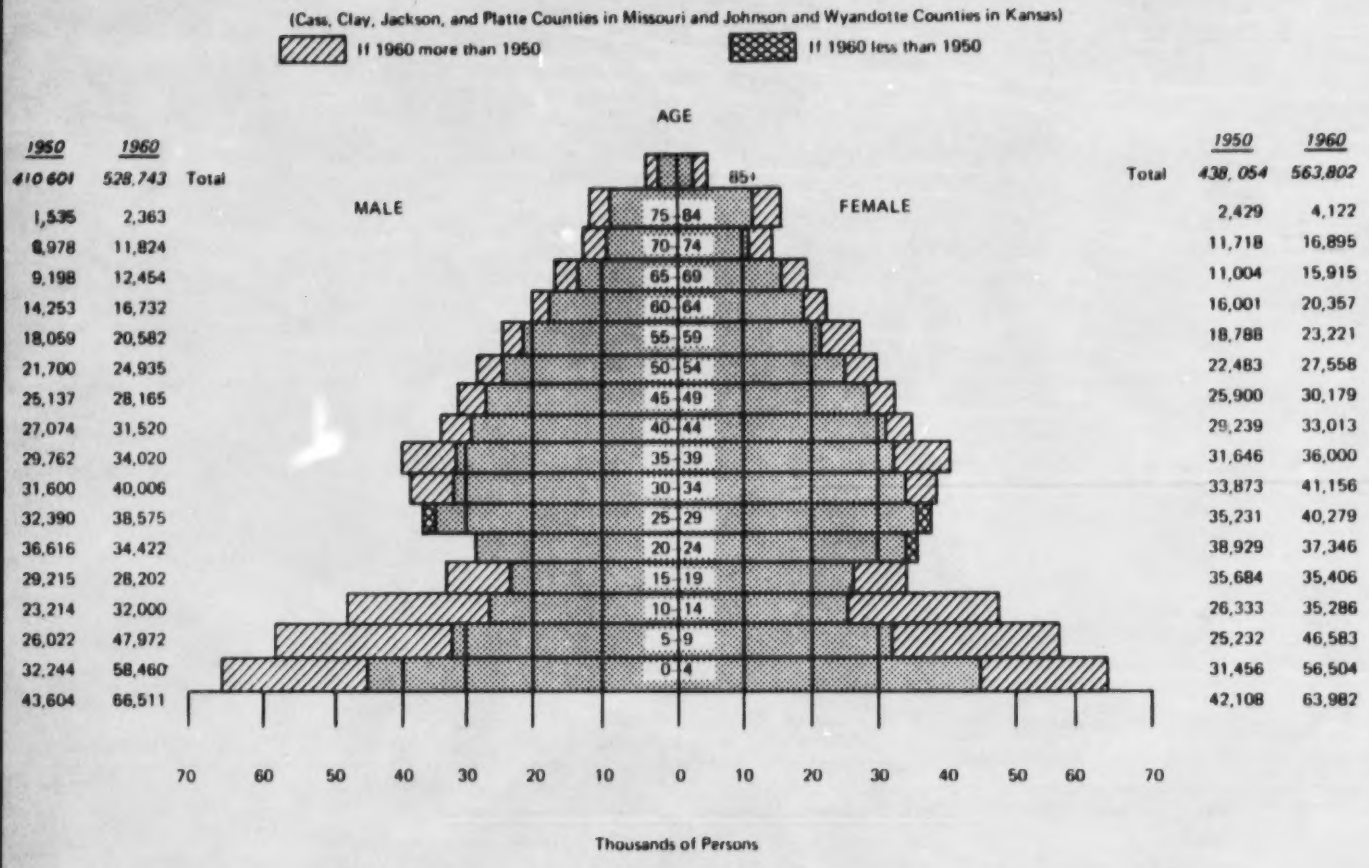
TABLE 18
POPULATION OF THE KANSAS CITY METROPOLITAN AREA: COMPONENTS OF CHANGE, 1950-1960 AND 1960-1965

SMSA and County	1950 to 1960					1960 to 1965*				
	Change (Apr. 1, 1950 to Apr. 1, 1960)		Components of Change			Change (Apr. 1, 1960 to July 1, 1965)		Components of Change		
	Number	Percent	Births	Deaths	Net Migration	Number	Percent	Births	Deaths	Net Migration
Kansas City SMSA, Total	243,890	+ 28.7	250,286	95,587	+89,191	+90,000	+ 8.3	137,000	56,000	+ 9,000
Clay, Mo.	+42,253	+ 93.4	16,735	4,779	+30,297	+12,000	+14.1	11,000	3,000	+ 4,000
Jackson, Mo.	+81,697	+ 15.1	146,535	64,121	- 717	+17,000	+ 2.8	78,000	36,000	-25,000
Cass, Mo.	+10,377	+ 53.7	4,993	2,446	+ 7,830	+ 9,000	+31.1	3,000	1,000	+ 7,000
Platte, Mo.	+ 8,377	+ 55.9	4,189	1,689	+ 5,877	+ 4,000	+18.1	3,000	1,000	+ 3,000
Johnson, Kans.	+81,009	+129.0	28,382	5,395	+58,022	+45,000	+31.5	18,000	4,000	+32,000
Wyandotte, Kans.	+20,177	+ 12.2	49,452	17,157	-12,118	+ 2,000	+ 1.1	25,000	10,000	-13,000

NOTES: *Parts may not add to the totals due to rounding.

SOURCES: 1950-1960: U. S. Bureau of the Census, *Current Population Reports*, Series P-23, No. 7, "Components of Population Change, 1950 to 1960, for Counties, Standard Metropolitan Statistical Areas, State Economic Areas, and Economic Subregions," (November, 1962), pp. 27-28, 36-37.

1960-1965: U. S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 371, "Estimates of the Population of Standard Metropolitan Statistical Areas: July 1, 1965," (August 14, 1967), p. 22.



SOURCE: Compiled by Arthur D. Little, Inc., from U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Population Characteristics, Missouri*, Final Report PC(1) 27B and *Kansas*, Final Report PC(1) 18B (Washington, D. C.: U. S. Government Printing Office, 1961), Table 27.

FIGURE 3 POPULATION OF THE KANSAS CITY STANDARD METROPOLITAN STATISTICAL AREA, 1950 AND 1960

the 20-29 age group, the metropolitan area experienced a net increase during the same period. The lack of any increase in the 20-29 age group should not be construed as a net loss of young people to other areas. On the contrary, a comparison of the number of youngers in the 10-19 age group in 1950 with those in the 20-29 age group in 1960 indicates that there must have been a net gain through net migration.

Distribution of the nonwhite population, however, underwent significant changes. While in 1950 64.4 percent of the nonwhite population was concentrated in Jackson County and 33.3 percent in Wyandotte County, by 1960 Jackson County's share increased to 71.6 percent as Wyandotte County's share declined to 26.2 percent. The greater relative concentration of the nonwhite population in Jackson County represented a greater concentration in Kansas City, Mo., which in 1960 included 70.6 percent of the metropolitan area's total nonwhite population.

In 1960, the number of nonwhite children under 10 years of age was substantially higher than the number of youngsters between 10 to 19 years of age. The clear implication of this from an educational standpoint is that those who were under 10 years of age in 1960 will potentially represent a far greater demand for higher educational facilities for their vocational and academic development in the years ahead than has been the case in the past. Secondly, those who were 14 years old or younger in 1960 will be 20-34 years old by 1980, which implies that, everything else being equal, there will be almost twice as much nonwhite population in the 20-34 age group in 1980 than in 1960. As a result, natural increase among the nonwhite population during the latter part of the next decade will in all likelihood be significantly higher than observed during the last few years.

The educational attainment of the area's adult population compares quite favorably with other metropolitan areas and with the national urban average up to high school education, but beyond that, it suffers by comparison. That is, the Kansas City Metropolitan Area adult population does not appear to have as high a mix of college educated persons as, for example, Dallas, Atlanta, Minneapolis-St. Paul, Denver, or Los Angeles. It does show, however, a better overall educational attainment profile than does St. Louis or Milwaukee. In the Kansas City Metropolitan Area, 15.4 percent of the adult population (25 years old or over) have completed the equivalent of a junior college education. With the development of a comprehensive community college system, this should increase substantially. In other metropolitan areas that have well developed community college systems, such as Los Angeles, this is 18.8 percent. In Denver, it is 21.8 percent.

The white adult population of Jackson County seems to have a lower mix of well educated persons than does the metropolitan area as a whole. Furthermore, and more significantly, the educational attainment of Jackson County's adult nonwhite population is disproportionately below that of the white population. While 50.1 percent of the whites

have completed high school, this appears to be only 31.5 percent for the nonwhites. Further, compared with 14.9 percent of the whites who have completed two years of college, only 7.8 percent of the nonwhites have attained as much education. Finally, only 3.6 percent of the nonwhites have completed four or more years of college, while this is 8.1 percent for the whites. It is quite clear that the very heavy attrition rate along the educational ladder is a contributing factor in the very low educational attainment levels of the nonwhite population. Whether or not this attrition process is taking its toll on today's nonwhite generation is not certain. It should not be amiss to point out, however, that in general the educational attainment of Kansas City's white *and* nonwhite population can be significantly improved in the years ahead. To have the next generation better educated, much still needs to be done.

By 1990, the Kansas City Metropolitan Area is expected to have anywhere between 2.5 to 2.9 million people, according to the projections that have been made by the City Planning Department of Kansas City, Mo., and Metropolitan Planning Commission-Kansas City Region. This will mean, roughly, a doubling of the present 1.3 million population living in the six-county area during the next 22-23 years. These projections appear reasonable in view of the fact that since 1940 the area's population increased by about 79 percent.

In the years ahead, the suburbanization process in the Kansas City Metropolitan area will continue. While Jackson County is expected to increase its population by anywhere between 42 to 84 percent, Clay County is expected to double or triple its population, Cass County will more than double its population, Platte County will have three to four times its current population, and Wyandotte County will grow anywhere between 40 to 60 percent. Johnson County, on the other hand, is somewhat open to contention. According to the projections made by the City Planning Department of Kansas City, Mo., Johnson County's growth will be modest (83 percent). According to the Metropolitan Area Planning Commission projections, however, Johnson County will have four times its present population by 1990.

According to the projections made by the City Planning Department of Kansas City, Mo., the four-county Missouri part of the Metropolitan area will increase its population by 854,935 persons between 1967 and 1990, of which 585,544 or 68.5 percent is expected to take place in Jackson County. In contrast with this, the Metropolitan Planning Commission projections indicate that, according to the "low" projection series, this growth will be 603,244 persons, 294,374 or 48.8 percent of which will take place in Jackson County. According to the Commission's "high" projection series, the growth will be 811,244 persons, of which 432,374 or 53.3 percent will take place in Jackson County. The growth expected to take place in Jackson County varies, then, between 294,374 to 585,544 persons. By the same token, the growth expected to take place in Platte, Clay, and Cass Counties varies between 269,391 to 378,870 persons.

3. Population Growth Patterns and Changes in Population Distribution within the Kansas City Metropolitan Area

The two "central" counties, Jackson and Wyandotte taken together, have been declining in their share of total six-county metropolitan area population since 1940. In 1940, 86.5 percent of the total population in the six-county Kansas City Metropolitan Area lived in these two "central" counties. Since then, their population share has declined to 83.2 percent in 1950, 74.0 percent in 1960, and finally to 70.0 percent in 1967. Kansas City, Missouri, the major central city of the metropolitan area, has likewise declined in its share of total metropolitan area population from 55.3 percent in 1940 to 53.8 percent in 1950 and to 43.6 percent in 1960.

Although the two "central" counties have been declining in their share of total SMSA population, they have, nevertheless, been growing in absolute terms. Thus, the two counties taken together grew by 11.8 percent during the 1940-1950 decade, by 12.6 percent during the 1950-1960 decade, and finally, by 11.1 percent between 1960 and 1967.

Compared with these two "central" counties, the four "outer" counties consisting of Clay, Platte, Cass, and Johnson, have doubled their combined population between 1950 and 1960 and have grown by 28.4 percent between 1960 and 1965 (35.6 percent between 1960 and 1967). During the 1950-1960 decade, 71.1 percent of this population growth was due to net migration from the two "central" counties as well as from outside the metropolitan area. Between 1960 and 1965, net migration accounted for only 57.0 percent of the total growth. As noted earlier, while a substantial part of the growth due to net migration during the 1950-1960 decade represented an influx of people from outside the metropolitan area during the 1960-1965 period, the growth through net migration simply reflected a shift of the population from the two central counties to these four outer counties.

Among the four "outer" counties, Johnson County experienced the highest growth rate between 1950 and 1960 (129.0%), followed by Clay (93.4%), Platte (55.9%), and Cass (50.8%). In all cases, over 70% of the absolute population growth during this period was due to net migration: 75.5% for Cass, 71.7% for Clay, 71.6% for Johnson, and 70.2% for Platte. During the period 1960 to 1965, growth rates were much lower, ranging between 14.3 percent for Clay County and 31.4 percent for Johnson County. During this period, net migration (mostly from the two central counties) accounted for 77.8 percent of the growth in Cass County, 75.0 percent in Platte, 71.0 percent in Johnson, and finally, 33.3 percent of the growth in Clay County.

As the "outer" counties have been experiencing continual population growth both through natural increase and through net migration, the two "central" counties have been experiencing a modest population growth through natural increase, while losing population through net migration. The net migration data available for these two "central" counties mask the real dimensions of outward population movements from the central cities themselves. This is particularly true for Jackson County, which has experienced significant internal population shifts although taken as a whole it shows relatively little population loss through net migration. It should be noted that while the major part of

Kansas City, Mo., included within Jackson County has experienced no increase in population between 1950 and 1960, other areas within Jackson County were increasing very fast. Lee's Summit, for example, grew from 2,554 to 8,267, and Grandview from 1,556 to 6,027. Raytown, meanwhile, reached a population of 17,083 in 1960, after having experienced a rapid growth prior to and following its incorporation.

The people who have moved into the suburban areas within the two "central" counties as well as into the four "outer" counties have been largely young families. This has resulted in a shift in the age profile of different areas. As illustrated in Figure 4, the proportion of the "suburban" population in the younger age groups is visibly higher than that of the "central city" population, while it is just the reverse for the older age groups. To put it simply, the suburban population has become relatively younger while the central city population has become relatively older.

The population growth pattern in Jackson County requires special scrutiny both to avoid possible misinterpretation of some of the data already presented and also to put the growth experienced by Jackson County within the perspective of general growth that took place in the Missouri part of the metropolitan area. We should note, first, that while Jackson County grew by 15.1 percent between 1950 and 1960, the three counties in Missouri (Clay, Platte, and Cass) grew by 76.7 percent. In addition, between 1960 and 1967, the growth rate for Jackson County ranged between 7.8 to 11.7 percent, depending on the various population estimates made for 1967.* Meanwhile, the three outer counties in Missouri (Clay, Platte, and Cass) grew by 29.5 to 31.7 percent during the same period, depending again on the various population estimates made for 1967.** As a result of these significantly slower growth rates Jackson County experienced a sharp decline in its share of total four-county (Missouri) population, from 87.2 percent in 1950 to 81.6 percent in 1960, and finally to about 78.7 to 79.0 percent in 1967.***

Secondly, the data presented in Tables 16 and 17 may lead one to the somewhat misleading conclusion that while Jackson County grew by about 17,000 persons between 1960 and 1965, it gained about 55,000 during the two year period between 1965 and 1967. Actually, the situation is quite different when different data sources are studied. For example, the growth between 1960 and 1965 would have been not 17,000 but 37,000 if Sales Management estimate of Jackson County population for 1965 is used (refer to

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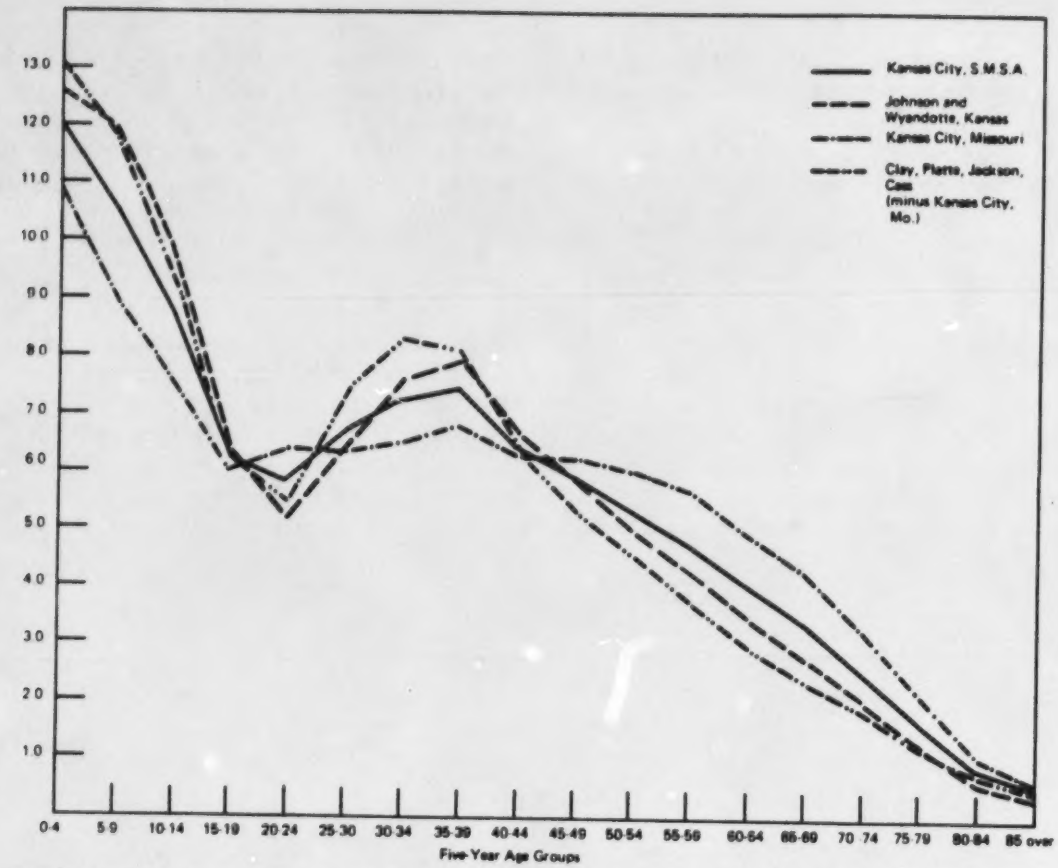
*Sales Management estimates (685,000), as reported in the Chamber of Commerce of Kansas City, Research Department, Economic Fact Book, Greater Kansas City, 1968, p. B-4; estimates made by the Metropolitan Area Planning Commission – Kansas City Region (672,299), as reported in "Population Projections, 1990, Kansas City Metropolitan Region," a mimeographed release in 1967; and finally, estimate made by the City Planning Department of Kansas City, Mo., as shown in Table 2 above.

**Sales Management: 182,000; Metropolitan Planning Commission – Kansas City Region: 182,331; City Planning Department, Kansas City, Mo.: 185,130. Totals are for the three counties combined.

***Sales Management: 79.0 percent; Metropolitan Planning Commission – Kansas City Region: 78.7 percent; City Planning Department, Kansas City, Mo.: 78.9 percent.



SOURCE: Compiled by Arthur D. Little, Inc., from U.S. Bureau of the Census, *U.S. Census of Population: 1960, General Population Characteristics, Missouri*, Final Report PC(1) 27B and *Kansas*, Final Report (PC) 18B (Washington, D.C.: U.S. Government Printing Office, 1961), Tables 20 and 27.

FIGURE 4
DISTRIBUTION OF TOTAL POPULATION INTO FIVE-YEAR AGE GROUPS IN 1960 FOR PARTS OF THE KANSAS CITY METROPOLITAN AREA

footnotes on previous page) rather than the U. S. Bureau of the Census estimate of 640,000. Furthermore, the growth experienced between 1965 and 1967 ranges between 12,299 to 55,626, depending on the various combinations of population estimates available both for 1965 and 1967.*

Thirdly, the net migration estimate for Jackson County for the 1960-1965 period given in Table 18 would be somewhat different if other data sources are analyzed. Table 18, based on U.S. Bureau of the Census estimates, shows that Jackson County lost about 25,000 persons through net migration during the 1960-1965 period. Using other data sources, we estimate that this loss ranged between 12,000 to 32,000 persons, approximately.**

4. Mobility of the Kansas City Metropolitan Area Population, 1955-1960***

The mobility of the Kansas City Metropolitan Area population reflects a generally well-known recent national trend. In 1960, over 54 percent of the six-county metropolitan area (SMSA) population reported that they were living somewhere else in 1955, within or outside the Kansas City region. As shown in Table 19, almost 44 percent of the SMSA population were living in the same house in 1960 that they occupied in 1955, about 22 percent said they had moved to their 1960 place of residence from the central city, and 18 percent were entirely new to the area.

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*

1965	1967	Growth 1965-1967
(a) 640,000	(c) 685,000	(c) - (a) 45,000
(b) 660,000	(d) 672,299	(c) - (b) 25,000
	(e) 695,626	(d) - (a) 32,299
		(d) - (b) 12,299
		(e) - (a) 55,626
		(e) - (b) 35,626

Sources: (a) U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 7, "Estimates of the Population of Standard Metropolitan Statistical Areas: July 1, 1965" (August 14, 1967), p. 22.

(b)-(c) Sales Management estimates. Refer to the first footnote on the previous page.

(d) Metropolitan Planning Commission – Kansas City Region estimate. Refer to the first footnote on the previous page.

(e) City Planning Department, Kansas City, Mo., estimate. Refer to the first footnote on the previous page.

**Given that the number of resident deaths in Jackson County was about 85,512 during the April 1, 1960 to July 1, 1965 period and the number of births was about 36,201 (computed from the sources listed below), then the 1960-1965 population growth would be about 17,000 if the Census estimate of 1965 population (640,000) is used, and it would be 37,000 if the Sales Management estimate (660,000) is used. Thus, assuming a growth of 17,000, net migration would be -32,000, while it would be 12,000 if we assume that population growth was 37,000.

Sources: (1) Number of births and deaths: 1960-1961, 1963-1965: From Department of Public Health and Welfare of Missouri, Division of Health, Missouri Public Health Statistics - Vital Statistics, annual publications; 1961 data were obtained from the Kansas City Star, Market Research Department, Basic Economic Data: A Report on the Kansas City Metropolitan Area (January, 1965), p. 9.

(2) Population estimates for 1965: Refer to the footnote above.

***Analysis of mobility presented here focuses on the five-year period from 1955 to 1960 since detailed information is available for this period.

TABLE 19
RESIDENCE OF PERSONS FIVE YEARS OLD AND OVER IN 1960

SMSA and County	*1960 Total*	*Same House*	*Central City in SMSA*	*Other Areas in SMSA*	*Outside SMSA*
Kansas City Metropolitan Area	100.0	43.6	22.4	16.0	18.0
Clay, Mo.	100.0	37.6	21.3	18.7	22.4
Jackson, Mo.	100.0	42.4	32.2	9.0	14.4
Cass, Mo.	100.0	37.8	n.a.	n.a.	n.a.
Platte, Mo.	100.0	45.6	8.4	22.9	23.1
Johnson, Kans.	100.0	41.5	11.1	24.1	23.3
Wyandotte, Kans.	100.0	51.7	3.3	32.4	12.6

NOTES: n.a.: Not Available

Source: Sigler, Jack E. *The Population of the Kansas City Metropolitan Area 1960.* Kansas City, Mo.: Community Studies, Inc., Department of Social Problems and Education, Publication No. 136, August, 1962, Table 37, p. 160.

Within the metropolitan area, different areas experienced different mobility patterns. For example, slightly over 62 percent of the people living in Clay County in 1960 had moved there between 1955 and 1960. This was about 59 percent for Johnson County, 56 percent for Jackson County, 54 percent for Platte County, and 48 percent for Wyandotte County. Nearly one-third of Jackson County's residents in 1960 were living in the central city five years earlier, while this was only about 3 percent for Wyandotte County, 8 percent for Platte County, 11 percent for Johnson County, and 21 percent for Clay County.

As shown in Tables 20 and 21, the total number of persons five years old and over in 1960 who left the four-county Kansas City Metropolitan Area* between 1955 and 1960 (140,245) was greater than the number of those who actually moved into the metropolitan area (127,582) during the same period. Thus, on balance, the four-county metropolitan area would seem to have lost 12,663 persons. A further investigation of these two tables indicates that the net "loss" was entirely concentrated among the white people (13,480), while the area experienced a net gain of slightly over 800 nonwhite persons.

This conclusion, however, does not hold for the six-county metropolitan area as a whole. In view of the fact that the six-county metropolitan area as a whole (SMSA) gained about 82,000 persons through net in-migration during the last decade and in view of the fact that the SMSA population grew by about 65,000 during the first half of the decade and by about 179,000 during the second half**, it would have been difficult to argue that the Kansas City SMSA lost population through net out-migration during the second half of the last decade. The apparent discrepancy between the "net loss" conclusion reached earlier for the four-county area and the "net gain" argument for the six-county area can be resolved with the aid of Figure 5. First, some of the out-movers from the four-county area undoubtedly moved into Cass and Platte Counties. Thus, it is likely that a significant part of the 8,020 persons who moved into these two counties from another county in Missouri actually came from the four-county metropolitan area as defined in the 1960 Census. This, by itself, should substantially narrow the "net loss" for the SMSA as a whole. Secondly, these two counties gained about 13,000 persons via net in-migration during the last decade (Table 18). Given the fact that the combined population of the two counties grew by only about 2,500 during the first half of the decade, while the growth during the second half was about 16,500, it seems reasonable to argue that most of the net in-migration into these two counties occurred during the second half of the decade. As shown in Figure 5, the two counties received 9,760 persons five years old or older in 1960 (including those whose place of residence in 1955 was not reported) from outside the SMSA during the second half of the decade. These facts seem to indicate that the two counties taken together experienced a substantial surplus of in-comers over out-movers. In conclusion, the Kansas City SMSA as a whole appears to have gained new population through net in-migration during the second half of the decade.

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*Clay, Jackson, Johnson, and Wyandotte Counties.

**Refer to Table 18 and the Chamber of Commerce of Greater Kansas City, Economic Fact Book, Greater Kansas City, 1968, p. B-4.

TABLE 20
PLACE OF ORIGIN OF PERSONS WHO MOVED INTO THE KANSAS CITY METROPOLITAN AREA BETWEEN 1955 AND 1960

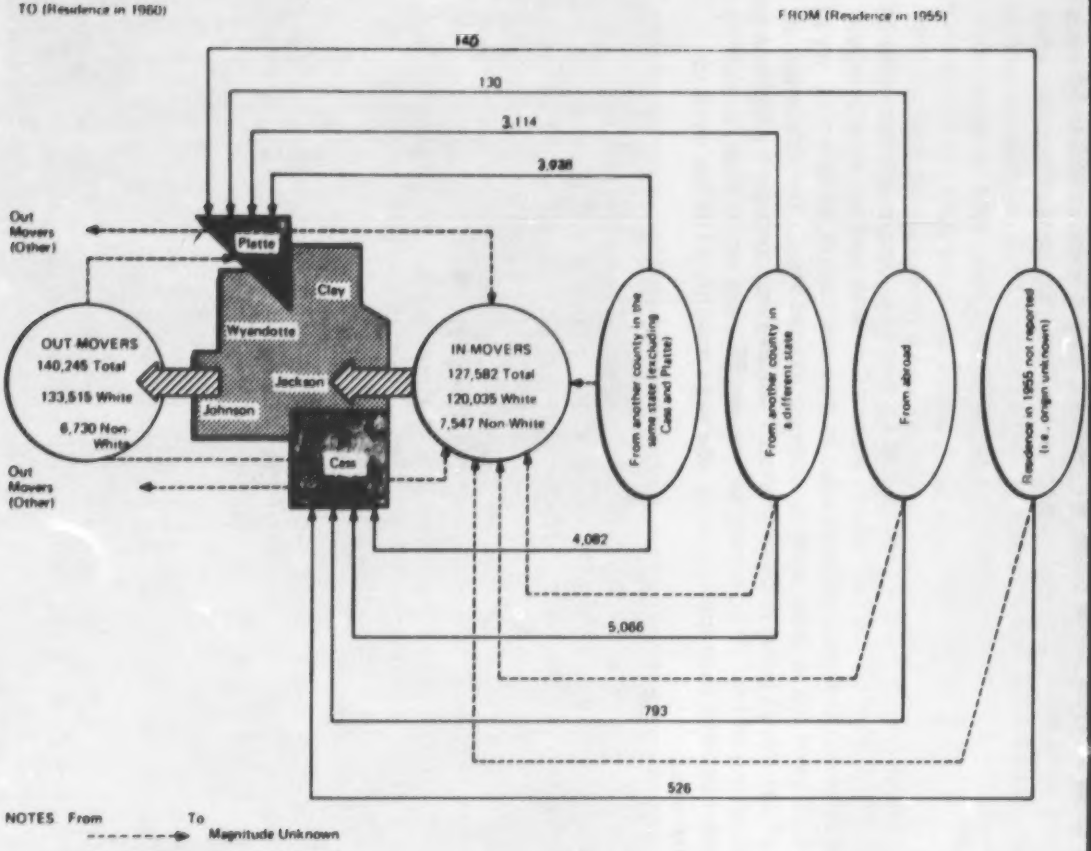
Subject, Age	Total	Number Moved From		Total	Percent Moved From	
		Another SMSA	Non-Metro Area		Another SMSA	Non-Metro Area
Total White and Nonwhite:						
Total 5 years old and over in 1960	127,582	55,683	71,899	100.0	43.6	56.4
5-9	16,772	8,268	8,504	100.0	49.3	50.7
10-14	11,123	5,076	6,047	100.0	45.6	54.4
15-19	10,565	3,464	7,101	100.0	32.8	67.2
20-24	19,354	5,576	13,778	100.0	28.8	71.2
25-29	18,267	8,163	10,104	100.0	44.7	55.3
30-34	12,856	6,489	6,367	100.0	50.5	49.5
35-44	17,811	9,470	8,341	100.0	53.2	46.8
45-54	9,811	4,949	4,862	100.0	50.4	49.6
55-64	5,379	2,135	3,235	100.0	39.8	60.2
65 and over	5,663	2,093	3,560	100.0	37.0	63.0
Total White:						
Total 5 years old and over in 1960	120,035	52,271	67,764	100.0	43.5	56.5
5-9	15,852	7,879	7,973	100.0	49.7	50.3
10-14	10,392	4,788	5,604	100.0	46.1	53.9
15-19	9,832	3,222	6,610	100.0	32.8	67.2
20-24	18,011	5,114	12,897	100.0	28.4	71.6
25-29	17,176	7,612	9,564	100.0	44.3	55.7
30-34	12,260	6,156	6,094	100.0	50.3	49.7
35-44	16,905	8,922	7,983	100.0	52.8	47.2
45-54	9,297	4,676	4,621	100.0	50.3	49.7
55-64	5,029	1,983	3,046	100.0	39.4	60.6
65 and over	5,291	1,919	3,372	100.0	36.3	63.7
Total Nonwhite:						
Total 5 years old and over in 1960	7,547	3,412	4,135	100.0	45.2	54.8
5-9	920	389	531	100.0	42.3	57.7
10-14	731	288	443	100.0	39.4	60.6
15-19	733	242	491	100.0	33.0	67.0
20-24	1,343	462	881	100.0	34.4	65.6
25-29	1,091	551	540	100.0	50.5	49.5
30-34	606	333	273	100.0	55.0	45.0
35-44	906	548	358	100.0	60.5	39.5
45-54	514	273	241	100.0	53.1	46.9
55-64	341	152	189	100.0	44.6	55.4
65 and over	262	174	188	100.0	48.1	51.9

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population, 1960, Subject Reports, Mobility for Metropolitan Areas,* Final Report PC (2)-2C (Washington, D. C.: U. S. Government Printing Office, 1963), p.138. The figures presented here are based on a twenty-five percent sample.

TABLE 21
PLACE OF DESTINATION OF OUT-MOVERS, FIVE YEARS OLD AND OVER IN 1960, WHO WERE RESIDENTS OF THE KANSAS CITY METROPOLITAN AREA IN 1955

Subject, Age	Total Out-Movers	Number Moved To		Percent Moved To		
		Another SMSA	Non-Metro Area	Total	Another SMSA	Non-Metro Area
Total White and Nonwhite:						
Five years old and over in 1960	140,245	77,362	62,883	100.0	55.2	44.8
5-9 yrs.	19,901	11,034	8,867	100.0	55.4	44.6
10-14	13,139	7,234	5,905	100.0	55.1	44.9
15-19	12,379	5,939	6,440	100.0	48.0	52.0
20-24	15,430	8,010	7,420	100.0	51.9	48.1
25-29	15,698	9,084	6,614	100.0	57.9	42.1
30-34	15,897	9,220	6,477	100.0	58.7	41.3
35-44	21,925	13,491	8,434	100.0	61.5	38.5
45-54	11,346	6,470	4,876	100.0	57.0	43.0
55-64	7,185	3,471	3,694	100.0	48.4	51.6
65 and over	7,565	3,409	4,156	100.0	45.1	54.9
Total White:						
Five years old and over in 1960	133,515	72,475	61,040	100.0	54.3	45.7
5-9 yrs.	19,052	10,424	8,628	100.0	54.7	45.3
10-14	12,684	6,868	5,816	100.0	54.1	45.9
15-19	11,769	5,563	6,206	100.0	47.3	52.7
20-24	14,340	7,275	7,065	100.0	50.7	49.3
25-29	14,809	8,378	6,431	100.0	56.6	43.4
30-34	14,827	8,597	6,230	100.0	58.0	42.0
35-44	21,047	12,796	8,251	100.0	60.8	39.2
45-54	10,858	6,081	4,777	100.0	56.0	44.0
55-64	6,822	3,238	3,584	100.0	47.5	52.5
65 and over	7,307	3,255	4,052	100.0	44.5	55.5
Total Nonwhite:						
Five years old and over in 1960	6,730	4,887	1,843	100.0	72.6	27.4
5-9 yrs.	849	610	239	100.0	71.8	28.2
10-14	455	366	89	100.0	80.4	19.6
15-19	610	376	234	100.0	61.6	38.4
20-24	1,090	735	355	100.0	67.4	32.6
25-29	889	706	183	100.0	79.4	20.6
30-34	870	623	247	100.0	71.6	28.4
35-44	878	695	183	100.0	79.2	20.8
45-54	488	389	99	100.0	79.7	20.3
55-64	343	233	110	100.0	67.9	32.1
65 and over	258	154	104	100.0	59.7	40.3

SOURCE U. S. Bureau of the Census, *U. S. Census of Population: 1960, Subject Reports, Mobility for Metropolitan Areas*, Final Report PC (2) 2C (Washington, D.C. U. S. Government Printing Office, 1963), p. 272. The figures presented here are based on a twenty five percent sample.



SOURCE (1) Tables and

(2) U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Social and Economic Characteristics, Missouri*, Final Report PC(1) 27C (Washington, D. C.: U. S. Government Printing Office, 1962), Table 82.

FIGURE 5 KANSAS CITY METROPOLITAN AREA POPULATION SHIFTS, 1955-1960

Although Tables 20 and 21 pertain only to the four-county area, it is instructive to study them. Table 20 shows, for example, that more people moved into the four-county Kansas City Metropolitan Area from nonmetropolitan areas than from metropolitan areas. This pattern was especially true for in-movers below 30 years of age and for those 55 years old or older. Of the in-movers 15-19 years old in 1960, for example, about 67 percent came from nonmetropolitan areas. This was 71 percent for in-movers in the 20-24 years age group, 55 percent for those 25-29 years old, 60 percent for those 55-64 years old, 63 percent for those 65 years old or older. By contrast, among in-movers 30 to 54 years old in 1960, more came from other metropolitan areas than from nonmetropolitan areas. This general patterns by age does not appear to vary by race. That is, both whites and nonwhites show about the same general pattern by age as to the proportion that came from metropolitan or nonmetropolitan areas.

An analysis of Table 21 shows that a majority of the out-movers under 55 years of age (in 1960) who left the four-county Kansas City Metropolitan Area between 1955 and 1960 selected other metropolitan areas as their destination, while a majority of those who were 55 years old or older went to nonmetropolitan areas. The proportion of out-movers in all age groups going to other metropolitan area was consistently higher among nonwhites than among whites. Also, among out-movers 55 years old or older, a majority of nonwhites went to other metropolitan areas whereas a majority of whites went to nonmetropolitan areas.

A comparison of the educational attainment of in-movers and out-movers 25 years old and older in 1960 is presented in Table 22. In general, the educational attainment of in-movers and out-movers shows a remarkable similarity. There are, however, some differences that should be pointed out. For example, the in-movers on the whole appear to have been slightly better educated than the out-movers. White in-movers had a higher proportion of college educated persons than white out-movers. For nonwhites, this was just the reverse: out-movers had a higher proportion of college educated persons than in-movers. In addition, nonwhite in-movers contained a higher proportion of persons with less than eighth grade education than nonwhite out-movers.

It is difficult to determine to what extent these trends have continued to the present. Nevertheless, they should be recognized and taken into account in shaping the future of higher education in the Kansas City Metropolitan Area.

5. Nonwhite Population of the Kansas City Metropolitan Area

While the total population of the six-county Kansas City Metropolitan Area increased by 28.7 percent during the 1950-1960 decade, nonwhite population in the metropolitan area increased from 88,541 in 1950 to 119,048 in 1960 or by 34.5 percent (Table 23). Much of this growth (73.5%) was due to the doubling of the nonwhite population under 20 years of age.

The percentage of nonwhite population in the metropolitan area remained practically constant between 1950 and 1960 at slightly under 11 percent (10.4% in 1950

TABLE 22
EDUCATIONAL ATTAINMENT OF ADULT OUT-MOVERS AND IN-MOVERS, KANSAS CITY METROPOLITAN AREA, 1955-1960

Subject, Number of School Years Completed	*– Number –*		*– Percent Breakdown –*	
	Out-Movers[a]	*In-Movers[b]*	*Out-Movers*	*In-Movers*
Total White & Nonwhite:				
25 years and over in 1960	79,396	69,768	100.0	100.0
Elementary: Less than 8 years	7,186	6,013	9.1	8.6
8 years	9,952	8,549	12.5	12.2
High School: 1-3 years	13,771	10,571	17.3	15.2
4 years	24,530	21,611	30.9	31.0
College: 1-3 years	11,837	10,539	14.9	15.1
4 years or more	12,120	12,485	15.3	17.9
Total White:				
25 years and over in 1960	75,670	65,948	100.0	100.0
Elementary: Less than 8 years	6,347	4,967	8.4	7.5
8 years	9,529	8,040	12.6	12.2
High School: 1-3 years	12,760	9,671	16.9	14.7
4 years	23,789	20,847	31.4	31.6
College: 1-3 years	11,442	10,222	15.1	15.5
4 years or more	11,803	12,201	15.6	18.5
Total Nonwhite:				
25 years and over in 1960	3,726	3,820	100.0	100.0
Elementary: Less than 8 years	839	1,046	22.5	27.4
8 years	423	509	11.4	13.3
High School: 1-3 years	1,011	900	27.1	23.6
4 years	741	764	19.9	20.0
College: 1-3 years	395	317	10.6	8.3
4 years or more	317	284	8.5	7.4

NOTES: [a]Persons 25 years old and over in 1960 whose place of residence in 1955 was within the Kansas City Metropolitan Area, then defined to include Clay and Jackson Counties in Missouri and Johnson and Wyandotte Counties in Kansas.

[b]Persons 25 years old and over in 1960 whose place of residence in 1955 was outside the Kansas City Metropolitan Area, then defined to include Clay and Jackson Counties in Missouri and Johnson and Wyandotte Counties in Kansas.

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, Subject Reports, Mobility for Metropolitan Areas,* Final Report PC(2)-2C (Washington, D. C.: U. S. Government Printing Office, 1963), p. 138, 272. The figures presented here are based on a twenty-five percent sample.

TABLE 23
KANSAS CITY METROPOLITAN AREA NONWHITE POPULATION GROWTH PATTERNS, 1950-1960

Age	1950			1960			Percent Change, 1950-1960		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Total	88,541	42,551	45,990	119,048	56,958	62,090	34.5	33.9	35.0
Under 5	8,584	4,344	4,240	17,945	8,965	8,980	109.1	106.4	111.8
5-9	6,780	3,402	3,378	13,718	6,839	6,879	102.3	101.0	103.6
10-14	5,973	2,967	3,006	10,204	5,013	5,191	70.8	69.0	72.6
15-19	5,443	2,507	2,936	7,355	3,466	3,889	35.1	38.2	32.5
20-24	6,646	2,840	3,806	6,817	2,967	3,850	2.6	4.5	1.2
25-29	7,767	3,571	4,196	7,376	3,363	4,013	-5.0	-5.8	-4.4
30-34	7,133	3,254	3,879	8,141	3,641	4,500	14.1	11.9	16.0
35-39	7,217	3,373	3,844	8,219	3,835	4,384	13.9	13.7	14.0
40-44	6,594	3,182	3,412	7,047	3,245	3,802	6.9	2.0	11.4
45-49	6,276	2,961	3,315	6,538	3,221	3,317	4.2	8.8	0.1
50-54	5,618	2,810	2,808	5,663	2,719	2,944	0.8	-3.2	4.8
55-59	4,486	2,351	2,135	5,517	2,648	2,869	23.0	12.6	34.4
60-64	3,343	1,737	1,606	4,503	2,196	2,307	34.7	26.4	43.6
65-69	3,242	1,579	1,663	3,977	1,913	2,064	22.7	21.2	24.1
70-74	1,736	862	874	2,840	1,407	1,433	63.6	63.2	64.0
75-84	1,434	707	727	2,661	1,301	1,360	85.6	84.0	87.1
85 +	269	104	165	527	219	308	95.9	110.6	86.7

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Population Characteristics, Missouri,* Final Report PC(1)-27B and *Kansas,* Final Report PC(1)-18B, (Washington, D. C.: U. S. Government Printing Office, 1961), Table 27.

and 10.9% in 1960), as shown in Table 24. Likewise, there were generally no significant changes in the proportion of nonwhite population in each five-year age group. Nonwhite children under five years of age, as percent of total number of children under five years of age, however, increased from 10.0 percent in 1950 to 13.8 percent in 1960.

In 1960, the number of children under 10 years of age comprised 26.6 percent of the total nonwhite population in the metropolitan area, while 10-19 year old youngsters accounted for another 14.7 percent. By contrast, only 11.7 percent of the total white population in the metropolitan area was below 10 years of age and 14.8 percent between 10 to 19 years. Thus, the nonwhite population had a relatively higher proportion of youngsters under 20 years of age (41.3%) than the white population (26.5%).

It should be noted that in 1960, the number of nonwhite children under 10 years of age (31,663) was substantially higher than the number of youngsters between 10 to 19 years of age (17,559). The clear implication of this for educational planning is that the potential demand for higher education in Kansas City on the part of the nonwhite youth will be much greater than it has been to date. Those who were under 10 years of age in 1960 are today under 18 years of age, crowding the public schools in Kansas City, and will potentially represent a higher demand for higher educational facilities for their vocational and academic development in the years ahead.

Another implication that those who were 14 years old or younger in 1960 will be in the 20-34 age group by 1980, which implies that, everything else being equal, there will be almost twice as much nonwhite population in the 20-34 age group in 1980 than in 1960. This in turn indicates that during the latter part of the next decade natural increase among the nonwhite population will in all likelihood be significantly higher than observed during the last few years.

As shown in Table 25, 97.8 percent of the total nonwhite population in the metropolitan area was concentrated in the two "central" counties (Jackson and Wyandotte), with 71.6 percent in Jackson and 26.2 percent in Wyandotte. The significant change between 1950 and 1960 was that Jackson County experienced an increase in its share of total nonwhite population (from 64.4 percent in 1950 to 71.8 percent in 1960), while Wyandotte County experienced a decline (from 33.3 percent to 26.2 percent). The greater relative concentration of the nonwhite population in Jackson County mostly represents a greater concentration within Kansas City, Missouri, which in 1960 included 70.6 percent of the metropolitan area's total nonwhite population.

The distribution of the nonwhite population within the metropolitan area by age is shown in Figure 6. One can thus see that in 1960, the percentage of nonwhite population by age in different parts of the metropolitan area showed considerable variations. For example, while in Kansas City, Mo., about 25 percent of the children under five years of age were nonwhite, this was about eleven percent for the metropolitan area as a whole, as well as for Johnson and Wyandotte Counties taken together, and only about two percent for the suburban areas in Missouri. Kansas City, Mo., also showed a high concentration of nonwhites among its population between ages 20 to 49, where the nonwhite population ranged roughly between 16 to 20 percent. This was under ten percent for the Kansas part

TABLE 24
NONWHITE POPULATION AS PERCENT OF TOTAL POPULATION KANSAS CITY METROPOLITAN AREA, 1950 AND 1960, BY SEX [a]

Age	Total [b]		Male [c]		Female [d]	
	1950	1960	1950	1960	1950	1960
Total	10.4	10.9	10.4	10.8	10.5	11.0
Under 5 years	10.0	13.8	10.0	13.5	10.1	14.0
5-9	10.6	11.9	10.6	11.7	10.7	12.2
10-14	11.7	10.8	11.4	10.4	11.9	11.1
15-19	11.0	10.9	10.8	10.8	11.1	11.0
20-24	10.2	10.7	9.7	10.5	10.7	10.9
25-29	10.3	10.3	9.8	9.8	10.8	10.7
30-34	10.5	10.3	10.0	9.4	11.0	11.2
35-39	11.0	10.1	10.7	9.6	11.3	10.7
40-44	10.7	10.1	10.7	9.5	10.8	10.6
45-49	11.1	10.1	10.9	10.2	11.3	10.0
50-54	11.0	9.7	11.2	9.7	10.8	9.8
55-59	10.2	10.5	10.8	10.6	9.5	10.4
60-64	9.1	10.3	9.6	10.7	8.5	9.9
65-69	10.7	10.7	11.1	11.4	10.4	10.1
70-74	8.6	10.0	9.4	11.3	7.9	9.0
75-84	6.9	9.3	7.9	11.0	6.2	8.0
85 and over	6.8	8.1	6.8	9.3	6.8	7.5

NOTES: [a]Kansas City Metropolitan Area is defined to include Cass, Clay, and Jackson Counties in Missouri and Johnson and Wyandotte Counties in Kansas.

[b]Percent of total SMSA population, both sexes, white and nonwhite, in the same age group.

[c]Percent of total SMSA male population, white and nonwhite, in the same age group.

[d]Percent of total SMSA female population, white and nonwhite, in the same age group.

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Population Characteristics, Missouri,* Final Report OC(1)-27B and *Kansas,* Final Report PC(1)-18B (Washington, D.C.: U. S. Government Printing Office, 1961), Table 20.

TABLE 25
KANSAS CITY METROPOLITAN AREA NONWHITE POPULATION GROWTH PATTERNS, 1950-1960, BY COUNTY

	Years		Percent Change	Percent Distribution	
	1950	1960	1950-1960	1950	1960
Kansas City SMSA, Total	88,541	119,049	34.5	100.0	100.0
Clay, Mo.	795	833	4.8	0.9	0.7
Jackson, Mo.	57,033	85,211	49.4	64.4	71.6
Cass, Mo.	166	366	120.5	0.2	0.3
Platte, Mo.	343	344	0.3	0.4	0.3
Johnson, Kans.	729	1,119	53.5	0.8	0.9
Wyandotte, Kans.	29,475	31,176	5.8	33.3	26.2

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Population Characteristics, Missouri,* Final Report PC(1)-17B and *Kansas,* Final Report PC(1)-18B, (Washington, D.C.: U. S. Government Printing Office, 1961), Table 27.

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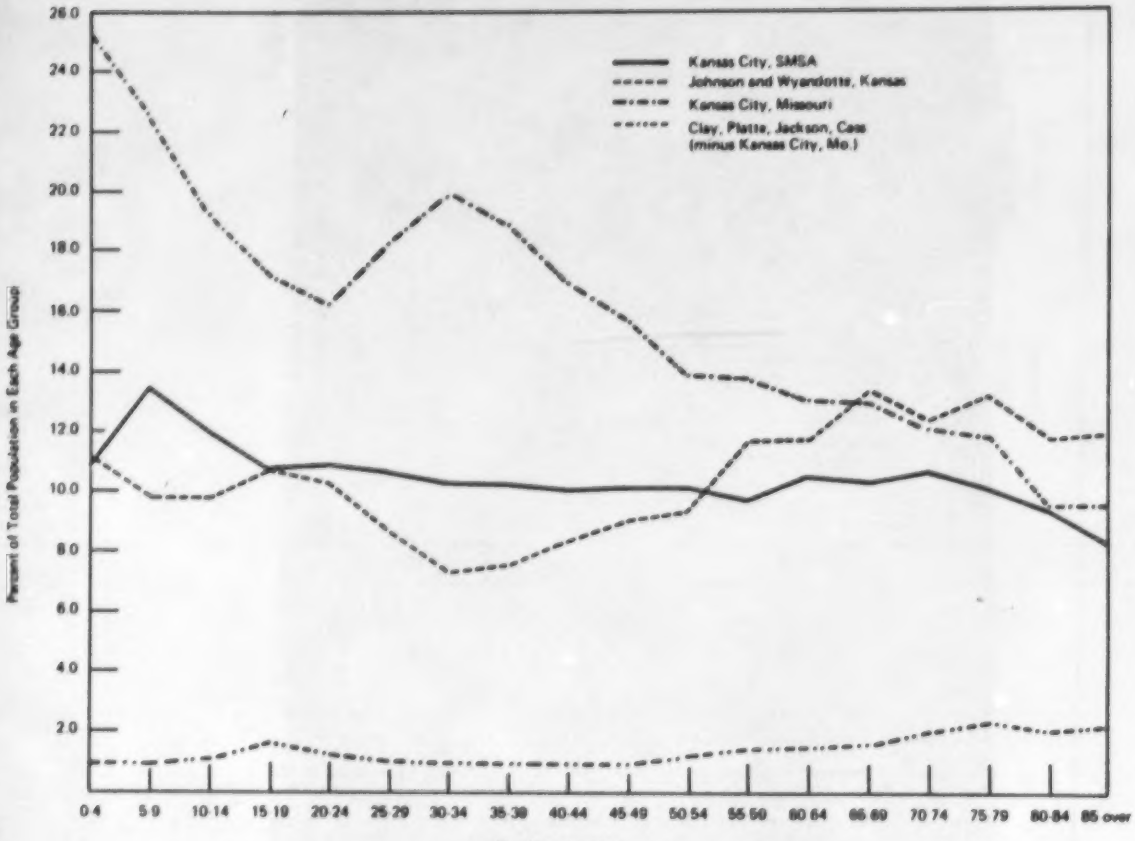

SOURCE: U. S. Bureau of the Census, *U. S. Census of Population: 1960, General Population Characteristics, Missouri* Final Report PC(1) 27B and *Kansas*, Final Report PC(1) 18B, (Washington, D.C.: U. S. Government Printing Office, 1961), Tables 20 and 27.

FIGURE 6 NONWHITE POPULATION AS PERCENT OF TOTAL POPULATION IN EACH FIVE YEAR AGE GROUP, FOR PARTS OF THE KANSAS CITY, SMSA, 1960

of the metropolitan area and below two percent for the suburban areas in Missouri. It should also be noted that the Kansas part of the metropolitan area had a relatively higher concentration of nonwhites among its elderly population (65 years old or over) than did Kansas City, Mo. Again, the proportion of nonwhites among the elderly population of the suburban areas in Missouri was slightly over two percent.

6. Educational Attainment Characteristics of the Kansas City Metropolitan Area Population

Educational attainment of the Kansas City Metropolitan Area population 25 years old or over in 1960, compared with that of other metropolitan areas and U.S. urban population, is shown in Figure 7 and Table 26. While Figure 7 serves as a compact visual summary, Table 26 provides detailed background information.

Educational attainment of the Kansas City Metropolitan Area adult population* in general compares quite favorably with other metropolitan areas and with the national urban average. In 1960, 85.1 percent of the metropolitan area population 25 years old or over had an eighth grade education, 49.6 percent had graduated from high school, and 8.6 percent were college graduates. National urban averages, respectively, were 80.3 percent , 44.2 percent, and 8.9 percent. Thus, except for the percentage completing college, Kansas City Metropolitan Area shows a better educational attainment profile than the national urban average.

The Kansas City Metropolitan Area adult population seems to be better educated on the whole than that of St. Louis (SMSA) and Milwaukee in terms of the number of school years, by showing a better record at all levels of educational attainment. Compared with Dallas and Atlanta, Kansas City (SMSA) shows a better educational attainment record up to the completion of high school, but beyond high school, it suffers by comparison. Finally, when compared with either Minneapolis-St. Paul, Denver, or Los Angeles-Long Beach SMSA, Kansas City (SMSA) comes out with a poorer record at all levels of educational attainment. In conclusion, it seems clear that Kansas City (SMSA) does not compare remarkably well with other metropolitan areas or with the U.S. urban average in terms of the proportion of its adult population that is college educated.

It should be noted, in addition, that while only 8.6 percent of the Kansas City (SMSA) adult population completed four or more years of college, 15.4 percent completed two years of college or the equivalent of a junior college education. Although this is above the national urban average, it can be improved significantly through the establishment of a community college system. In Los Angeles-Long Beach (SMSA), which has a well developed community college system, for example, the percentage of the adult population with two years of college education was 18.8 percent. Similarly, it was 21.8 percent in Denver, 17.9 percent in Minneapolis-St. Paul, as well as in Dallas.

Finally, as shown in Table 27, educational attainment levels among adult whites and nonwhites within the Kansas City Metropolitan Area show important differences. When the educational attainment levels of the white and nonwhite Jackson County residents 25 years old or over in 1960 are studied, the following conclusions emerge.

* The term "adult population" is used interchangeably with "population 25 years old or over."

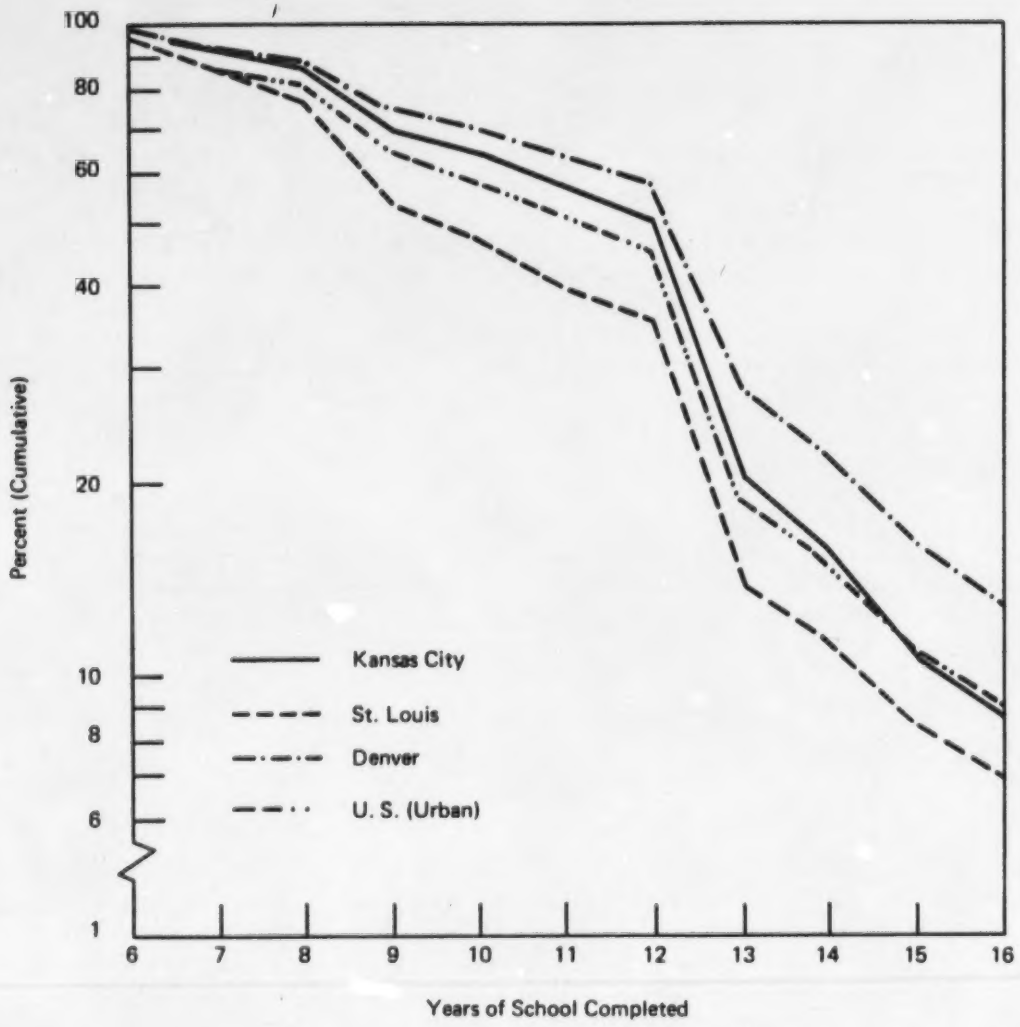

FIGURE 7 YEARS OF SCHOOL COMPLETED BY THE POPULATION 25 YEARS OLD AND OVER, 1960 (KANSAS CITY, ST. LOUIS, DENVER SMSA'S AND U.S. URBAN)

TABLE 26
EDUCATIONAL ATTAINMENT OF THE KANSAS CITY METROPOLITAN AREA POPULATION* 25 YEARS AND OVER, 1960 COMPARED WITH OTHER METROPOLITAN AREAS AND U. S. URBAN AVERAGE

Number of School Years Completed	U. S. Urban		Kansas City		St. Louis		Denver		Minneapolis-St. Paul		Milwaukee		Dallas		Atlanta		Los Angeles-Long Beach	
	% (a)	Cum. % (b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
17 and over	3.6	3.6	3.1	3.1	2.7	2.7	5.1	5.1	4.1	4.1	3.0	3.0	4.0	4.0	3.2	3.2	4.2	4.2
16	5.3	8.9	5.5	8.5	4.2	6.9	7.9	13.0	6.3	10.4	5.2	8.2	6.5	10.5	6.6	9.8	5.7	9.9
15	1.9	10.8	2.0	10.6	1.4	8.3	3.0	16.0	2.6	13.0	1.8	10.0	2.3	12.8	2.2	12.0	2.6	12.5
14	4.1	14.9	4.8	15.4	2.8	11.1	5.8	27.8	4.9	17.9	3.9	13.9	5.1	17.9	4.8	16.8	6.3	18.8
13	3.6	18.5	4.7	20.1	2.6	13.7	5.3	27.1	4.8	22.7	3.6	17.5	4.7	22.6	4.0	20.8	5.6	24.4
12	25.7	44.2	29.5	49.6	21.5	35.2	30.2	57.3	30.0	52.7	27.2	44.7	25.7	48.3	23.5	44.3	29.1	53.5
11	5.6	49.8	5.4	55.0	4.3	39.5	5.3	62.6	4.8	57.5	5.1	49.8	6.8	55.1	6.4	50.7	6.7	60.2
10	7.8	57.6	7.4	62.4	7.8	47.3	6.6	69.2	6.8	64.3	7.7	57.5	7.7	62.8	7.1	57.8	8.0	68.2
9	6.4	64.0	6.3	68.7	6.4	53.7	5.7	74.9	5.4	69.7	5.6	63.1	5.9	68.7	5.9	63.7	6.0	74.2
8	16.3	80.3	16.4	85.1	24.3	78.0	14.6	89.5	19.7	89.4	20.8	83.9	10.1	78.8	8.7	72.4	12.9	87.1
7	5.7	86.0	5.3	90.4	7.5	85.5	3.5	93.0	4.1	93.5	5.2	89.1	6.5	85.3	7.8	80.2	3.9	91.0
1-6	11.8	97.8	8.7	99.1	13.2	98.7	6.1	99.1	5.8	99.3	9.7	98.8	13.1	98.4	18.2	98.4	7.5	98.5

NOTES: *Clay, Jackson, Johnson, and Wyandotte Counties.

(a) Percent of total population 25 years old or over

(b) Summation of percentage figures shown under column (a).

Sources: (1) U. S. Bureau of the Census, *U. S. Census of Population: 1960, Vol. I, Characteristics of the Population, Part 1, United States Summary* (Washington, D.C.: U. S. Government Printing Office, 1964), Table 173.

(2) U. S. Bureau of the Census, *U. S. Census of Population: 1960, Detailed Characteristics, Missouri, Final Report PC(1)-27D* (Washington, D.C.: U. S. Government Printing Office, 1962), Table 103.

The same volume for the other states was used to compute the "years of school completed" information for the standard metropolitan statistical areas listed above.

TABLE 27
EDUCATIONAL ATTAINMENT OF JACKSON COUNTY, MISSOURI, RESIDENTS 25 YEARS OLD OR OVER, BY RACE, 1960

Number of School Years Completed	White Population		Nonwhite Population	
	Percent[a] (%)	Cumulative Percent[b]	Percent (%)	Cumulative Percent
17 or over	3.0	3.0	1.5	1.5
16	5.1	8.1	2.1	3.6
15	2.0	10.1	1.1	4.7
14	4.8	14.9	3.1	7.8
13	4.9	19.8	3.0	10.8
12	30.3	50.1	20.7	31.5
11	5.2	55.3	7.8	39.3
10	7.6	62.9	9.5	48.8
9	6.1	69.0	7.3	56.1
8	16.8	85.8	15.3	71.4
7	5.5	91.3	7.1	78.5
1-6	7.8	99.3	20.0	98.5

NOTES: [a]Percent of total population (white or nonwhite).

[b]Summation of percentage figures show in the column to the left.

SOURCE: U.S. Bureau of the Census, *U.S. Census of Population: 1960, Detailed Characteristics, Missouri,* Final Report PC(1)-27D (Washington, D.C.: U.S. Government Printing Office, 1962), Table 103.

First, the white adult population of Jackson County has a relatively lower proportion of persons with four or more years of college education compared with the metropolitan area as a whole. Furthermore, the proportion of white persons in Jackson County with two years of college education (14.9%) is below the metropolitan area level (15.4%).

Secondly, the educational attainment of the nonwhite residents of Jackson County 25 years old or over was significantly below that of white residents at all levels of educational attainment. While 50.1 percent of the whites have completed high school, this is only 31.5 percent for the nonwhites. Further, compared with 14.9 percent of the whites who have completed two years of college, only 7.8 percent of the nonwhites have attained as much education. Finally, only 3.6 percent of the nonwhites have completed four or more years of college, while this is 8.1 percent for the whites. In the educational process, it appears as though there is a sharp decline in the proportion of nonwhites who go on beyond the first six years of school. All along the educational scale, there is a definite, heavy attrition in the proportion of nonwhites who continue their education. This generalization does not, however, reflect upon the present educational system in Kansas City. It must be remembered that this is an observation on the end result of a process that was spread over many years. In addition, the educational attainment of the nonwhite population coming into Kansas City from other areas could not be used as an indictment of the Kansas City educational system. Whether or not this heavy attrition process holds true for the present generation of nonwhite residents of Kansas City is not certain. It should not be amiss to point out, however, that in general the educational attainment of Kansas City's white *and* nonwhite population can be significantly improved in the years ahead. To have the next generation better educated, much still needs to be done.

7. Projections of the Kansas City Metropolitan Area Population and Its Distribution

Several population projections have already been made for the Kansas City Metropolitan Area, as presented in Table 28. In view of the availability of these existing projections, we have selected to present and discuss them in a comparative fashion rather than undertake still another series of projections.

Table 28 contains four separate series of population projections which differ in terms of the target years covered. For example, the National Planning Association (NPA) projection is made for 1975 only, while the RAND Corporation projections made for five yearly intervals extend to 1985. Among the two remaining projection series, only the Kansas City, Missouri, City Planning Department (CPD-KC) projections continuously extend to 1990, after omitting 1970. Meanwhile, the projections made by the Metropolitan Planning Commission - Kansas City Region (MPC-KCR) have been made publicly available only for 1990, even though projections for the intervening five-yearly periods are available in a draft report which is being circulated as of this writing, for discussion only.

Comparison of these available projections for the years that are common to them indicate some differences. For example, the NPA projection to 1975, which is slightly over 1.3 million, is below the RAND and CPD-KC projections which average about

TABLE 28
COMPARISON OF ALTERNATIVE POPULATION PROJECTIONS FOR THE KANSAS CITY METROPOLITAN AREA

POPULATION PROJECTIONS	*1967*[a]	*1970*	*1975*	*1980*	*1985*	*1990*
Kansas City SMSA Total						
1. NPA	1,285,186	n.a.	1,335.9[b]	n.a.	n.a	n.a.
2. RAND	1,285,186	1,310,054	1,474,362	1,662,440	1,870,358	n.a.
3. CPD-KC	1,285,186	n.a.	1,521,212	1,892,551	2,140,110	2,473,520
4. MPC-KCR	1,285,186	c	c	c	c	2,503,000 Low 2,853,000 High

NOTES: [a] Actual (July 1). See Source 3 below.

[b] In thousands of persons

[c] Available but not given here since they represent only temporary estimates

n.a. Not available

SOURCES:

(1) NPA: National Planning Association, Center for Economic Projections, *Economic and Demographic Projections for Two Hundred and Twenty-Four Metropolitan Areas,* Population, Income and Distribution of *Employment Among Industries,* Volume III, Regional Economic Projections Series – Report No. 67-R-1 (Washington, D. C.: National Planning Association, May, 1967), p. S-765.

(2) RAND: Ira S. Lowry, *Metropolitan Populations to 1985: Trial Projections,* RAND Corporation Memorandum, RM-4125-RC (Santa Monica, California: The RAND Corporation, September, 1964), p. 14. The projections presented here are only trial projections, as indicated in the title of the report from which they have been obtained. These projections, called Series II projections in the report, assume that the 1950-1960 migration patterns will prevail during the projection period. Series I projections, which we do not present here, were made assuming zero net migration throughout the projection period.

(3) City Planning Department, Kansas City, Missouri, "Population Estimates – July 1, 1967 and Land Area in Square Miles" (July 1, 1967). Mimeographed, 3 pp.

(4) Metropolitan Planning Commission, Kansas City Region, "Population Projections, 1990, Kansas City Region" (1967). Mimeographed, 2 pp.

1.5 million. The similarity between these two latter projection series (i.e., RAND and CPD-KC), however, start to diminish beyond 1975, although the differences in 1980 and 1985 do not seem to be very high. For 1990, the "low" projection made by MPC-KCR (2.5 million) is essentially the same as the CPD-KC projection, after they are both rounded off to the nearest hundred thousand. The difference arises between the "high" MPC-KCR projection and the single CPD-KC projection, where the difference amounts to about three-hundred thousand. In such a long-term projection, however, a difference of three-hundred thousand should not be viewed as something significant. In summary, then, the population of the Kansas City Metropolitan Area is projected to increase from 1,285,186 in 1967 to anywhere between 2,473.0 and 2,853.0 thousand by 1990. This represents an anticipated 92.5 to 122.0 percent increase, or very roughly, a doubling of the present population of the six-county metropolitan area.

Among the six counties that make up the Kansas City Standard Metropolitan Statistical Area, the fastest *rate* of growth is anticipated to take place in Platte County between 1967 and 1990 according to the CPD-KC projections and in Johnson County according to the MPC-KCR projections (Refer to Table 29). In fact, the two sets of projections differ sharply on the question of where population growth will occur within the metropolitan area. The major question centers around the population growth prospects of Johnson County. Whereas the CPD-KC projection for Johnson County anticipates barely a doubling of its current population of about 200 thousand, the MPC-KCR projection indicates a 1990 population for Johnson County that is approximately four times its present population. This significant discrepancy in the two projection series and other minor differences undoubtedly stem from different assumptions regarding the rate of future residential development in Johnson County as opposed to other locations in the general Kansas City region and from different assumptions regarding the content and nature of future zoning ordinances and land development controls in Johnson County.

The projected distribution of the metropolitan area population by 1990 reflect the differences in the two series already mentioned. Again, Johnson County is projected to have about 15 percent of the total metropolitan area according to the CPD-KC projection series, but about 29 percent according to the MPC-KCR series. While Jackson County is anticipated to have slightly over half of the entire metropolitan area population by 1990 (53.3%) according to the CPD-KC projections, it will have barely 40 percent according to the MPC-KCR projections (Table 30).

TABLE 29
KANSAS CITY METROPOLITAN AREA POPULATION PROJECTIONS, BY COUNTY, 1967-1990

SMSA and County			*1967 (July 1)*	*1975*	*1980*	*1985*	1990		
							(1)	*(2)*	
								Low	*High*
Kansas City SMSA									
Total	(a)	Population	1,285,186	1,521,212	1,892,551	2,140,110	2,405,340	2,503,000	2,853,000
	(b)	Growth Index (1967 = 100)	100	118	147	167	187	195	222
Clay, Missouri	(a)	Population	114,240	132,518	165,913	188,176	223,748	324,000	370,000
	(b)	Growth Index	100	116	145	165	196	284	324
Jackson, Missouri	(a)	Population	695,626	806,926	1,010,271	1,145,835	1,281,170	990,000	1,128,000
	(b)	Growth Index	100	116	145	165	184	142	162
Cass, Missouri	(a)	Population	39,780	50,123	67,867	79,696	96,114	83,000	95,000
	(b)	Growth Index	100	126	171	200	242	209	239
Platte, Missouri	(a)	Population	31,110	42,310	68,204	85,466	134,659	87,000	99,000
	(b)	Growth Index	100	136	219	275	433	280	318
Johnson, Kansas	(a)	Population	201,960	254,865	313,846	353,430	368,981	735,000	837,000
	(b)	Growth Index	100	126	155	175	183	364	414
Wyandotte, Kansas	(a)	Population	202,470	234,865	266,450	287,507	300,668	284,000	324,000
	(b)	Growth Index	100	116	132	142	148	140	160

SOURCES: 1967, 1975, 1985, and 1990 (1): City Planning Department, Kansas City, Missouri, "Population Estimates – July 1, 1967 and Land Area in Square Miles" (July 1, 1967). Mimeographed, 3 pp.

1990 (2): Metropolitan Planning Commission – Kansas City Region, "Population Projections, 1990, Kansas City Region" (1967). Mimeographed, 2 pp.

TABLE 30
POPULATION DISTRIBUTION IN THE KANSAS CITY METROPOLITAN AREA, BY COUNTY: PAST TRENDS AND PROJECTIONS TO 1990

SMSA and County	– Years –												1990		
													(1)	(2)	
	1950	1960	1961	1962	1963	1964	1965	1966	1967	1975	1980	1985		Low	High
Kansas City SMSA Total (Percent)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Clay, Mo.	5.7	8.0	8.1	8.0	8.2	8.3	8.4	8.9	8.9	8.7	8.8	8.8	9.3	12.9	13.0
Jackson, Mo.	63.7	57.0	56.3	55.3	55.0	54.5	54.1	54.4	54.1	53.0	53.4	53.6	53.3	39.6	39.5
Cass, Mo.	2.3	2.7	3.1	3.4	3.2	3.2	3.3	3.1	3.1	3.3	3.5	3.7	4.0	3.3	3.3
Platte, Mo.	1.8	2.1	2.2	2.2	2.3	2.3	2.4	2.3	2.4	2.8	3.6	4.0	5.8	3.5	3.5
Johnson, Kans.	7.4	13.2	13.7	14.4	14.9	15.6	16.0	15.4	15.7	16.8	16.6	16.5	15.3	29.4	29.3
Wyandotte, Kans.	19.5	17.0	16.6	16.7	16.4	16.1	15.8	15.9	15.8	15.4	14.1	13.4	12.5	11.3	11.4

SOURCE: Tables and

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